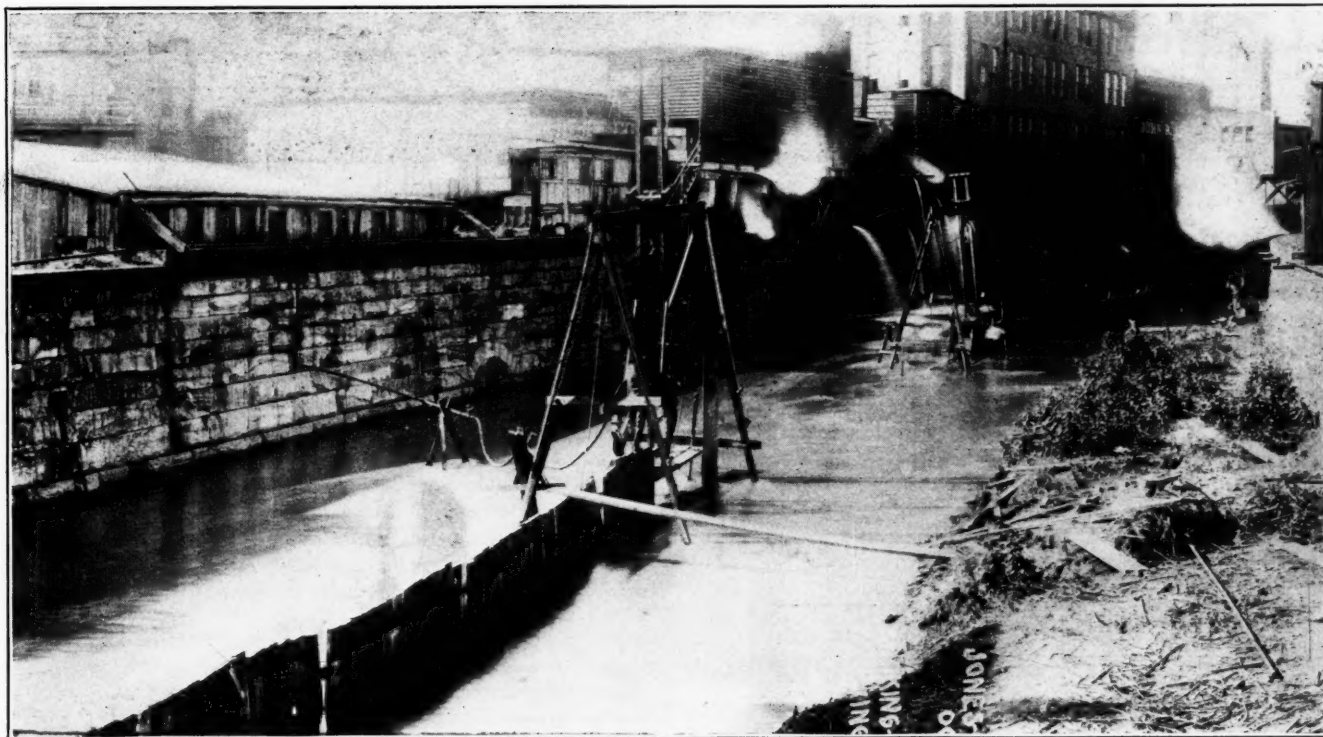


# Municipal Journal

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NEW YORK, NOVEMBER 29, 1911

No. 22



DRIVING SHEET PILING FOR COFFERDAM IN JONES FALLS

## JONES FALLS CONDUITS, BALTIMORE

Carrying a Large Stream Through the Center of the City—Restricted Head Room and Internal Pressure Necessitate Flat Roof and Heavy Reinforcement—Roof to Carry a Street

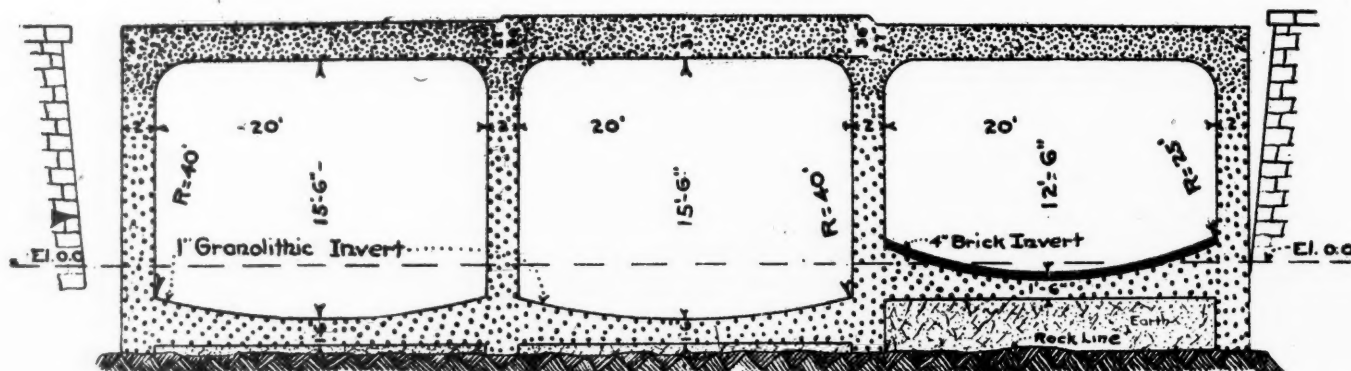
When the Baltimore (Md.) Sewerage Commission in 1905 began its study of the drainage and sewerage requirements of the city it decided that one of the matters requiring its earliest attention was the flooding of a low section of the city, adjacent to a stream known as Jones Falls, by every considerable flood discharge of that stream (which drains about 57 square miles), which served as a combined sewer for a very considerable area. So low were some of the street surfaces relative to this stream that the drains from the catch basins to it, though laid at a flat grade, entered near the bed of the stream, and the flood waters would back up through these pipes and inlets into the streets themselves, standing five feet deep at one street corner in July, 1905. Some years ago every high water overflowed the banks also, but this had been to a large degree prevented by the building of high masonry retaining walls throughout that length of the stream which was

within the main part of the city, this work having cost about one million dollars. The fact that the stream, which flows across practically the entire width of the city, receives sanitary sewage has resulted in an almost intolerable condition at its mouth, which had been developed as a part of the docking facilities of the city; the sewage matter settled there putrifying and converting the outlet into an active septic tank.

The commission considerably relieved the flooding condition as promptly as possible by the construction of a storm water sewer along the west side of the stream discharging directly into the harbor. This sewer is entirely submerged at the highest tides, but even so has removed the storm water from the street surfaces at such times. The house sewerage system has been designed to intercept all house sewage throughout the territory, so that the unsanitary condition due to its discharge into the stream will be terminated. It has been the

experience in other cities, however, that an open stream like this flowing through the city is very difficult to keep in a sightly and sanitary condition; moreover, there is still some danger from maximum floods, and it was decided to convert the stream into a covered conduit or a series of conduits. An additional argument in favor of this was the possibility of using as a street the strip of territory occupied by the stream, which

the docks and the railroads. This proposed street will be constructed by a commission known as the Jones Falls Boulevard Commission, since the Sewerage Board has no authority to spend any money for this purpose. It is probable, however, that it will not be constructed as a boulevard but rather as a street for heavy hauling. If this is done, no private property will need to be purchased, but what are now the backs of



STANDARD SECTIONS OF CONDUITS, ON ROCK

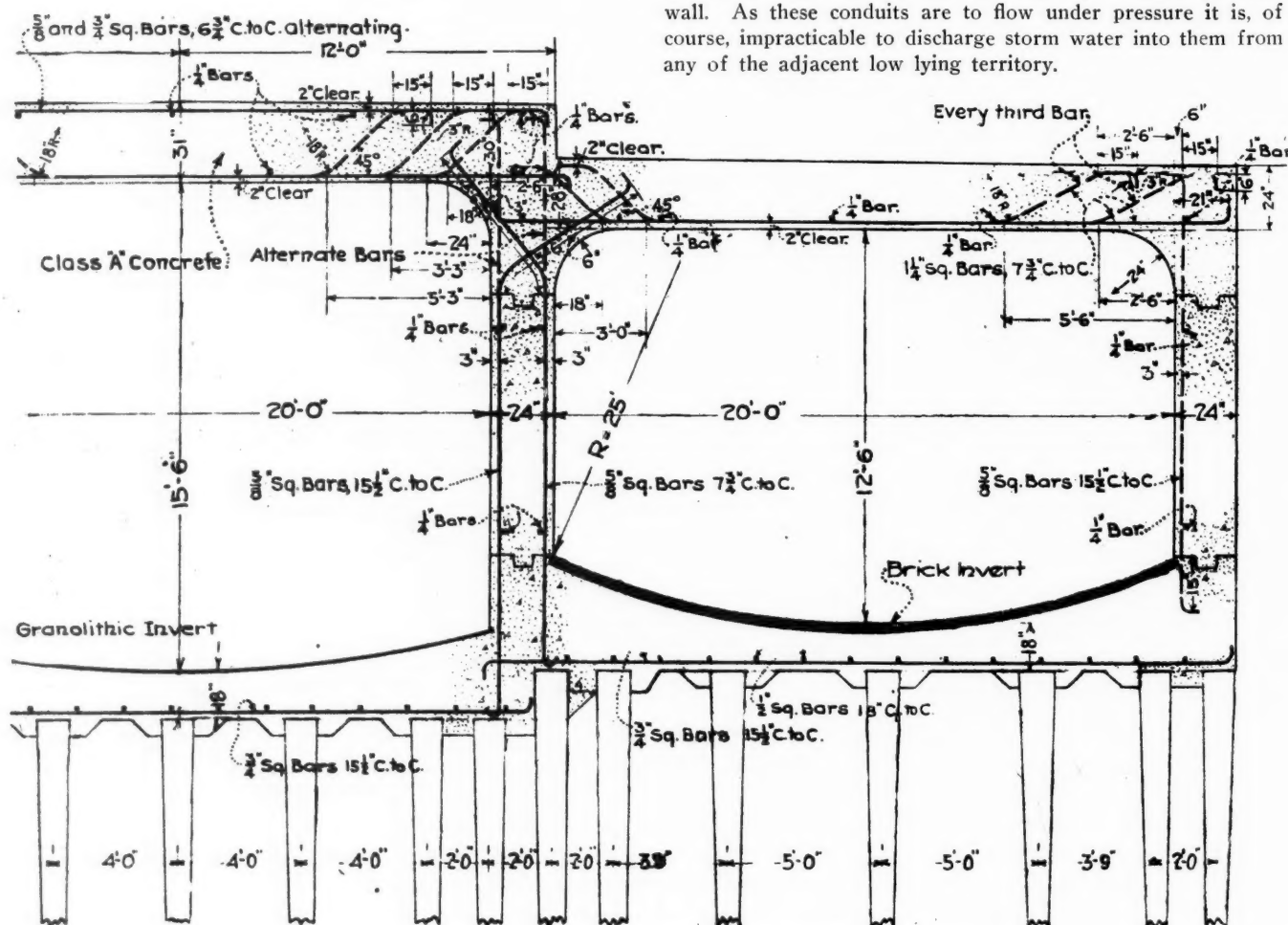
nearly bisects the city and has an average grade of 35 ft. to the mile. Concerning this Chief Engineer Calvin W. Hendrick said in his 1906 report:

Taken from a financial standpoint alone it would be a paying investment, as the increased valuations placed on the properties adjacent to the Falls would go a long way toward paying the interest on the amount needed for the improvement and the charges of a sinking fund to redeem the issue. The saving in the cost of trucking between the docks and the railroads would in a short time amount to a large saving to the merchants.

At present there is no street with easy grades connecting

existing lots will then front upon this street and the property be greatly increased in value.

A study of the problem indicated the advisability of constructing two conduits, one for carrying the ordinary flow of the stream and the surface drainage from such adjoining part of the city as lay sufficiently high to prevent the waters from backing up onto it; and another conduit for carrying flood waters, estimated at 10,000 cubic feet per second, which conduit would, during extreme floods, flow under internal pressure with a maximum head of 12 feet. Owing to the volume of water and the limited headroom, it seemed necessary to divide the latter conduit into two units by a middle partition wall. As these conduits are to flow under pressure it is, of course, impracticable to discharge storm water into them from any of the adjacent low lying territory.



STANDARD SECTIONS ON PILE FOUNDATION

The pressure conduits are each 20 ft. wide and 15 ft. 6 in. deep, the bottoms being dished with a radius of 40 ft.; and throughout most of its length the gravity conduit has a diameter of 20 ft. and a depth of 12 ft. 6 in., dished with a radius of 25 ft. About 5,600 ft. above the lower end of the conduits the construction passes into tunnel, where all the flow is carried in a single conduit of basket-handle section 29 ft. in maximum diameter and 28 ft. high; this tunnel cutting off a long loop in



EXCAVATING FOR EAST CONDUIT

Cofferdam Completed. Construction Track Used for Removing Material

the existing channel. At the upper end of this tunnel, which is about 1,200 ft. long, the improvement ends and the stream is received by a bell mouth. At the lower end of the tunnel is a junction chamber 50 ft. long, connecting the tunnel with the three conduits. At this point the pressure conduits are each 17 ft. wide by 17 ft. high, while the gravity conduit is but 8 ft. wide and 12 ft. 6 in. high. By reducing the area of the mouth of the gravity conduit it is prevented from receiving more of the flood water than it can carry without producing internal pressure, even at times of the highest floods. The inverts at the upper ends of the three conduits and in the junction chamber are so arranged that all of the ordinary flow will be diverted into the gravity conduit, the invert of which is here about 7 ft. lower than the inverts of the pressure conduits.

At the outlet the conduits discharge onto a concrete apron 100 ft. long and covering the entire width of the stream between the existing walls; there being a cut-off wall at the lower end of this apron about 14 ft. deep.

Throughout most of the length of these conduits the top surface of their roofs, which are flat slabs, are in some cases one or two feet above and in others a similar distance below the tops of the existing walls. In no place will the walls need to be removed in the construction of the conduits. Throughout a considerable part of the length either one wall or both practically form a part of one or both of the outside conduit walls, but in every such case it is faced with a concrete wall. As the course of the stream throughout most of its length furnishes the natural location for the sanitary sewers, such sewers are to be included in this work, consisting of cast-iron pipes suspended by straps of  $\frac{3}{8} \times 1\frac{1}{2}$ -in. galvanized iron, spaced 12 ft. apart, and anchored to the faces of the existing retaining walls.

Concrete is used for the construction throughout. As it was necessary to utilize all the available headroom for the conduits, these were made with flat slab roofs and the street paving will rest directly upon these. These roofs will consequently be required to carry the heaviest street loads over 20-ft. spans, which makes quite heavy reinforcement necessary. The sides must also act to a certain extent as retaining walls, or rather

as vertical beams against the top and bottom slabs, with spans of about 15 ft., and these also are reinforced. As stated, two of the conduits may at times receive an internal pressure due to a head of 12 ft., which also had to be considered in estimating the necessary strength.

The hydraulic calculations indicated a velocity in the pressure conduits of more than 20 ft. per second during maximum floods. As these would occur at infrequent intervals it did not seem necessary to make any unusual provision for scour, except the construction of a grit interceptor at the upper end, and the invert is to be given a granolithic finish, one inch thick, of one part cement to two parts crushed granite. It was thought possible, however, that this high velocity through such a long conduit under pressure might be accompanied by a surging, or the existence of pressure waves somewhat similar in results to water hammer; which conditions have been found in water works' conduits and similar structures, although their cause and the theories of their action are not well understood. Considerable allowance for such pressures was made in designing the reinforcement. The east conduit, which receives the street washings and will carry the ordinary flow of the stream, since it is to be subject to continuous wear and also to receiving the grit from the streets, is provided with an invert of hard sewer brick.

Throughout a part of the length of the sewer the invert will rest on rock, or on the material now forming the bed of the stream, which is a combination of gravel, clay and some large stone; the sidewalls, however, being carried down to rock. Toward the lower end, however, the rock dips to a considerable depth, and here the entire structure will be supported on piles. These piles are located 2 ft. by 2 ft. 6 in. between centers under each wall, with three rows of piles five feet between centers longitudinally under each invert.

The bottoms of all conduits are in general 18 in. thick at the center line. The walls are all 24 in. thick. The roof slabs of the west and east conduits are 24 in. thick, and that of the middle conduit 31 in. The concrete for this work consists of cement, sand and screened gravel, mixed 1:2:4 for the reinforced work in the roof; 1:2½:5 for that in the side walls and bottoms, and 1:3:8 for backing and other concrete work where not so much strength is required. The sand is required to be a graded material not exceeding  $\frac{1}{4}$  in. in diameter, and the ballast to consist of screened and washed local gravel which is dredged from the river and contains no large stones.



FORM FOR INVERT IN PLACE

Also Shows Reinforcement for Side Walls of East Conduit

The transverse reinforcement in the invert consists of  $\frac{3}{4}$ -in. square bars spaced 15½ in. between centers and turned up at the ends 3 in. inside the outside faces of the walls. The longitudinal reinforcement in the invert consists of  $\frac{1}{2}$ -in. square bars 18 in. between centers. The vertical reinforcement in the outside walls consists of  $\frac{3}{4}$ -in. square bars spaced 15½ in. between centers, each bar turned at right angles at the end and



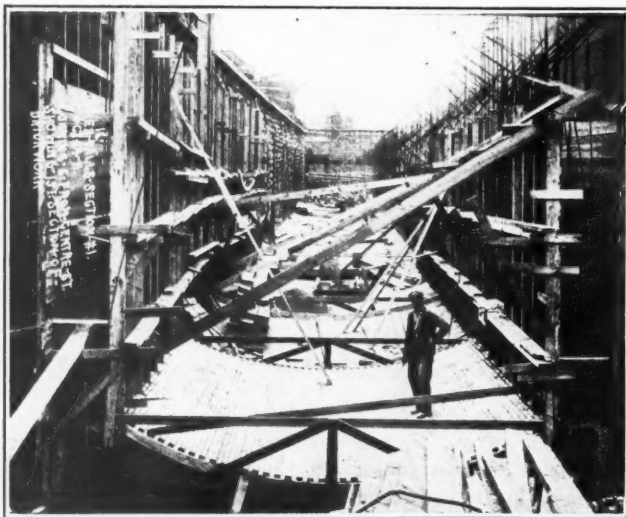


CONCRETE DISTRIBUTING TOWER

Pipe Carries Concrete from Tower to Car on the Right, Which Runs on Track Laid on Old Coping. At the Left, Elevator and Chute for Removing Excavated Material

continuous from the bottom of the invert concrete to the top of the roof slab. In the wall between the two pressure conduits the same sized bars are used, but are spaced  $7\frac{3}{4}$  in. between centers. Each upper and lower outside corner of the conduit is reinforced by bars set at an angle of 45 degrees with the vertical, tying the wall and horizontal slab together. There is no longitudinal reinforcement in the side walls, except four  $\frac{1}{4}$ -in. bars near the top and bottom to hold the vertical reinforcement in position. The reinforcement is placed 3 in. from the inner and outer surfaces in the side walls and 2 in. from the upper and lower surfaces in the roof slabs. The roof reinforcement on the under side consists of transverse  $1\frac{1}{4}$ -in. square bars spaced  $6\frac{3}{4}$  in. between centers; each rod being bent up at each end at an angle of 45 degrees to give a truss construction, the points of bending occurring 18 in., 3 ft. 3 in. and 5 ft. 3 in. from the inner face of the side walls, one-third of the bars bending at each of these points. In the gravity conduit there is no reinforcement at the top surface of the roof slab, but in the middle pressure conduit there is transverse reinforcement consisting of  $\frac{5}{8}$ -in. and  $\frac{3}{4}$ -in. square bars,  $6\frac{3}{4}$  in. between centers, the sizes alternating, and on the west conduit  $\frac{3}{4}$ -in. and  $\frac{7}{8}$ -in. bars spaced  $7\frac{3}{4}$  in. between centers. Havemeyer rods are used for most of the reinforcement.

Construction joints are left between the bottom and the side walls, and between these and the roof slab. These joints are formed by bedding stone, approximately a foot across and 4



FIRST SECTION OF BRICK INVERT COMPLETED  
Shows Forms for Side Walls and Reinforcement

to 6 in. thick, vertically in the top surface of the fresh concrete, in two rows, so that the stone will be bedded about one-half in the old and one-half in the new work. Vertical joints between monolithic sections, or those constructed at one operation, are made with the ordinary tongue and groove, the grooves being left 4 in. deep, 6 in. wide at the bottom and 10 in. at the face. The walls are made in 20-ft. sections and the roof slabs in 40-ft. sections; the roof slab joints coinciding with the alternate side wall joints. The roof slab joints and the corresponding wall joints are expected to serve as expansion joints, and are coated with oil to permit this.

The work has been let in two sections; section No. 1 to M. M. Elkan, of Macon, Ga. (the firm is now organized as the Elkan-Tufts Construction Co.); and section No. 2 to Fisher and Caruza, of Baltimore. The latter contract has just been let and no work has yet been done upon it. Contract No. 1, the lower section, has been under way for about two months, and several sections of invert and side walls have been placed, and the forms for the first section of roof were placed last week.

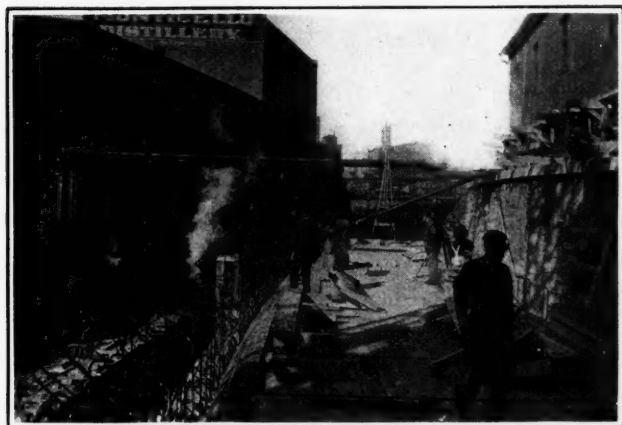
In carrying on this work the east conduit is being completed first, the flow of the stream being carried meantime between the existing west wall and a cofferdam wall which encloses the work on the east conduit. The construction of this cofferdam wall is the first operation, 16-ft. lengths of 2-in. planks being used for this, driven in two rows of sheeting about 4 ft. apart. These planks are driven into the bed of the stream to refusal, usually about 8 ft., a steam hammer pile driver being used. The space between the rows of sheeting is filled with material excavated from the bed of the stream. This dam has proved reasonably tight, one 6-in. centrifugal pump keeping the enclosure dry after it had once been emptied. Almost every building along the banks of the stream discharges manufacturing waste water and sewage into the stream, and this is taken care of by iron pipes carried across the work and discharging into the stream outside the cofferdam; although a few of those which do not contribute much water are allowed to discharge directly onto the work during excavation, this water being led to the sump of the pump.

As soon as the bed inside the cofferdam has been made dry, contractor's track is laid and the material excavated by hand and thrown into side-dump cars. At a street bridge crossing the stream a timber tower has been erected resting on the creek bottom and close to the railing of the bridge. This tower raises and lowers a bucket, into which, when at the bottom of the tower, the dump cars deposit the excavated material. The material is then raised by the bucket and dumped into a bin supported several feet above the street level by a trestle built on the bridge; from which bin the material is dumped into carts and removed. About an average of 5-ft. depth of material is being excavated at the present time.

The concrete mixing plant is also located on the bridge, occupying one of the sidewalks. A Ransome mixer, size No. 62, is used, which discharges directly into a bucket. In this bucket the concrete is raised to the top of a tower, where it is discharged into a spiral riveted pipe laid at an angle of about 45 degrees with the vertical, which carries it across the bridge and discharges it into a side-dump car, in which it is transported to the point where needed. These concrete cars are carried on a narrow gauge track laid on the top of the existing river wall, from which the concrete is dumped into the side wall forms or onto the bottom. Flory single-drum hoists are employed for raising the material in the towers. Provision is made for heating the sand and gravel during cold weather, consisting of a gridiron of 1-in. pipes, containing four lines of pipes 50 ft. long and about 18 in. apart, connected at the ends by similar pipes  $4\frac{1}{2}$  ft. long; this being fed with steam from the boiler used for operating the concrete mixer.

The bottom concrete is laid between templates about 12 to 15 ft. apart, in alternate sections; the surface being struck off by straight edges. The brick invert is laid on this, templates being used and each course of brick laid true by cord; this





SETTING FORM FOR ROOF SLAB  
Upper Ends of Side Reinforcement Rods on the Left.

brick work being completed before the side walls are poured. The forms for the side walls are very strong and stiff, 4-in. dressed boards being used for all exposed faces. The concrete is made fairly wet but not sloppy.

The contractor in Section I is securing exceedingly smooth surfaces both in the brick invert and in the walls. The latter show the marks of the forms very slightly, and these are being practically all removed by washing the walls with very thin grout by means of a whitewash brush as soon as the forms are removed.

### RICHMOND, VA., PAVING NOTES

TWO-THIRDS of the paving in Richmond, Va., is of gravel, 30 per cent of granite spall, and 7 per cent of asphalt block. The gravel used contains about 40 per cent clay, which is not washed or screened out, but is left in to serve as a binder. In the spring, when much of the mud has been forced to the surface by traffic, rain and frost, the surplus clay is scraped off and carted away. This is believed by city engineer Chas. E. Bolling, to be cheaper and more generally satisfactory than washing the gravel before using. Not much broken stone macadam is used, as granite, the only stone locally available, does not bind well.

Asphalt block gives good satisfaction, these showing little wear under medium traffic. Recently water from a broken water main forced its way through the pavement above and, spreading out, washed out the sand cushion from under a considerable area of asphalt blocks which had been down sixteen years. In spite of this age, 98 per cent were found suitable for relaying. None had worn down more than  $\frac{3}{4}$  to  $\frac{7}{8}$  inch, and only  $\frac{1}{8}$  inch wear was found at the gutters.

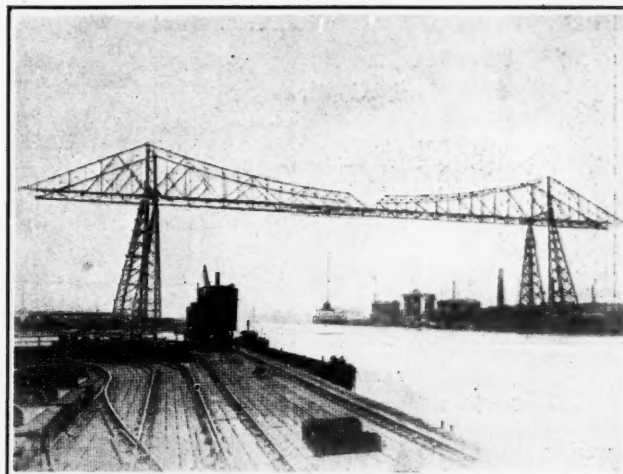
The granite spalls, so called, are blocks four or five inches square on the top face and of irregular depth. There is about a mile of rectangular-faced granite block paving, but 36 miles of spalls.

Mr. Bolling is experimenting with the use of asphalt in the gravel streets, the latest method being to spread clean gravel, wash sand into the interstices, and roll. On this is placed one inch of broken granite, which is rolled, then covered with Standard Road Oil and  $\frac{1}{2}$  inch of screenings and rolled again. So far the results appear very favorable.

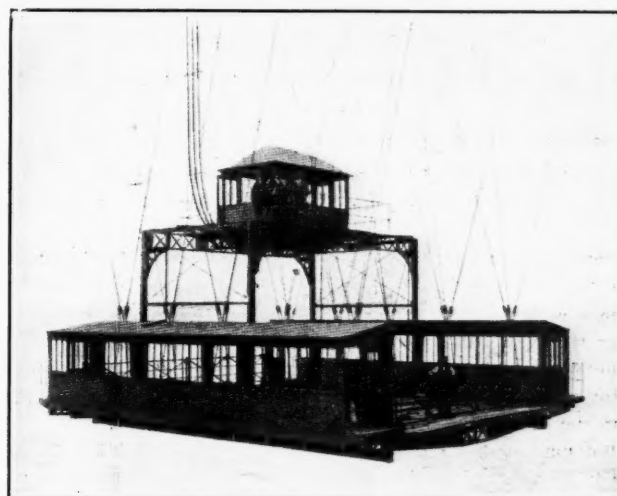
### AN ENGLISH BRIDGE FERRY

ABOUT the middle of October there was added one more to the limited number of bridge ferries or "transporter bridges" to be found in Europe and America. This one is across the river Tees at Middlesbrough, England. Prior to this time traffic across the river had been carried by ferryboats, and, as shown by the accompanying illustration, the new transporting system consists practically of a ferry boat suspended from a bridge rather than floating in the water.

The traveling car is 44 feet long by 39 feet wide, and has an accommodation of 500 to 600 passengers and six vehicles. The bridge consists of two cantilevers, each supported by a tower at the edge of the river and anchored by sixteen wire



TRANSPORTER BRIDGE ACROSS THE TEES



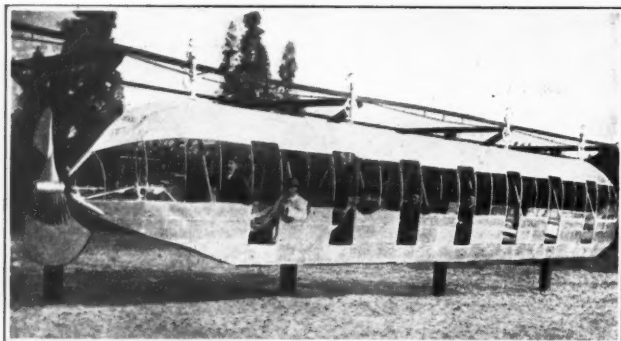
THE TRAVELLING CAR

cables to concrete anchorage blocks; each cable being capable of withstanding a breaking stress of 300 tons. The towers are 570 feet apart. The car is supported from a traveler carried by the bridge by thirty cables at such an elevation that its floor is level with the roadway on either bank of the river. The car is electrically driven from the power house, in which are located two motors, each capable of developing 60 horsepower. One motor is believed to be more than sufficient to propel the car, even in the severest gale, at a rate which will carry it across the river in less than two minutes. The duplicate motor is kept as a reserve in case of a breakdown.

The contract for this bridge ferry was let in June, 1909, at about \$331,000. The total cost of the works and approaches, including buildings and all auxiliary work in connection with the complete structure has been about \$409,000.

### AN AERIAL TROLLEY

An aerial trolley built upon absolutely unique plans has been constructed by J. W. Fawkes, of Burbank, Cal., and is in actual operation upon his estate. The car, which has a capacity of 56 passengers, is suspended from an overhead rail 10 feet above the ground, and is driven by a gas engine which operates a large, fan-shaped propeller. The car is capable of great speed, in fact the inventor claims that more than 100 miles per hour can be developed, and even upon the comparatively short track in Burbank (840 feet long) a satisfactory rate of speed can be maintained with safety. Among the advantages claimed are, for interurban traffic, the elimination of grade crossings; and for city traffic that it gives an elevated road which does not darken the streets any more than a system of ordinary trolley poles would do. Through cars can be routed on higher levels than the locals, and both can be entered from elevated stations; although the invention includes a device for quickly



AERIAL TROLLEY CAR

Carrying Supervisors of Los Angeles County

lowering the cars to ground level and drawing them back to place on the overhead track. The inventor, believing that he has demonstrated that this method of transportation is practical, is applying for a franchise to operate it between two beach towns in the vicinity of Los Angeles.

## RE-SURVEYS OF CITIES

Crudeness of Original Surveys—Excess Usually Found—  
Apportioning Error—Using Judgment—Marking  
Corners—Plans and Filing

From paper in *The Cornell Civil Engineer* by A. E. Duckham, C.E.

THE first principle to be applied is to try and put oneself in the position of the old surveyor of previous years, and find out the conditions under which he worked, and what he did. We must remember that his instruments were cruder—often only the compass and chain. The ground had but little value, and he was but poorly paid.

In making the survey, after getting all available data from offices or records, either in City Hall or Court House, measure up the *whole* square or block, and ascertain whether there is a shortage or excess in it; and, if so, how much. Usually we find it to be the latter, as it was the custom of earlier days to give "good measure," as it was called, allowing an inch or two excess per chain length. Sometimes this was done to allow for errors in slope measurement, as the early surveyor seemed to dislike "breaking chain." Also some of our cities have what is called "City Measure"; for example, the city of Pittsburgh allows an excess of .10 foot per 100 feet; thus in measuring 100 feet "City," we would actually measure 100.10 feet United States Standard measure. This so-called "City Measure" was originally caused by a 25-foot wooden pole, used as a standard of earlier days, which was 5/16 inch too long, making an error of 1 1/4 inches, or .10 foot in 100 feet. This was discovered about 40 years ago, and the city officials passed a law or "ordinance" perpetuating the mistake!

To return to the subject of excess or shortage. If any is found, it should, if possible, be divided *pro rata* among the lots of the plan. This rule will not always apply however: for instance, the block may be all built solid with buildings, in which case we cannot disturb the houses which have been standing for many years (twenty-one years of undisturbed possession giving them a legal title, as long as the building remains standing); remembering the law, which is common sense, that the owners who built the houses probably had the *original* pins to build by; and it is *not* a question as to where the pins should have been, but of where they were *placed* by the original surveyor. Owners cannot be dispossessed of their property and made to move their houses at the caprice of any engineer following after. This rule our courts have well established for the good of the public.

Again the rule of *pro rata* applies only to a *plan of lots*. If the property has been sold off not as lots but by tracts, each man's deed calling for a certain distance from the corner of a street, then each man gets just what his deed calls for,

and the *last* man who buys in that tract of land gets what is left, assuming the excess or shortage. Of course he has recourse against the man who sold him a certain number of feet (providing he gets *less* than what he bought), although, if the deed says "more or less" he has no redress.

In no case can the engineer go *out of the square* in which he is working to make any adjustment. Each square must stand upon its own merits; and if there is any error it must be adjusted in that square.

In a larger part of our older city districts there are no monuments or stones, and we have to make a complete survey of each and every house and lot in the square to determine to the best of our *judgment* where the original lines were; giving due credit to old pins, or marks on buildings, or curb, or cement, or stone walks. And right here let me say that this branch of engineering is not an *exact* science, but is dependent to a very large extent upon *common sense* and *judgment* just as is the practice of law, or medicine, or any other profession. Most laymen think that anyone who is able to use a tape and transit is competent to go out and make a re-survey. This is far from the truth. It requires years of experience and practice—and above all, the judgment of Solomon. "Give me wisdom" must be the prayer of the successful practitioner as well as the wise king of the Jews!

Oak pins 1 1/2 by 1 1/2 by 16 inches are usually set as corners (or on the 5 foot "range" or "running line" on the sidewalk) in the suburban districts; while in the older, built up, parts of the city, marks on the buildings, stone or cement sidewalks and curb are the custom—a crow-foot (or often a cross in the two latter places). A double "crow-foot" at a street corner on the face of the building indicates "right both ways."

In hunting for old corners often they seem to have completely disappeared; but, if the pins were set in the last dozen years, they may be discovered by the use of a spade or shovel, removing the top sod or dirt; the tack or nail center of course has disappeared; but what is left is more reliable than measuring from another point at a considerable distance away.

A further and more extended study of the subject may be profitably had by consulting "The Judicial Functions of Surveyors" by Chief Justice Cooley of the Supreme Court of Michigan.

The condition of the ground exerts quite an influence upon the permanence of wood corners, a state of continued moisture or dryness being the ideal condition. One time I found a corner stake in a pile of stones, which had been there thirty years, but which crumbled into dust upon being touched.

As to plans and indexing, I use, as far as possible, a standard size of plan, made on "onion-skin" paper, large business letter sheet size, and file them under the letter of owner's name and year made in letter files (book form). From these I make one or more blue prints which I furnish to the party having the survey made. At any time in the future he can have a blue print copy of same by applying for it. These plans are usually made on a scale of 20 or 30 feet to an inch to show details of houses. All dimensions and distances off lot lines are given. In addition to the above, the name of plan, number of lot and where plan is recorded are given (if the work is in a certain plan). The measure used (whether over or under U. S. Standard) is also indicated. The meridian is also placed on it. The street and lot bearings are used from the old plans, as they are simply to determine the angle for the next engineer who has to make a survey, or for the use of the attorney or real estate man in drawing up the description of the deed. Generally—in fact, almost always—the old bearings are (unfortunately) magnetic bearings. I say unfortunately, because, though of little importance in city work, the "true" bearings would be of great service in work in country districts to give some idea by which we could search for the old corners. Not only that, but it would be more scientific; and we would not have the trouble of explaining to the attorneys such matters as the "variation of the needle," and why the magnetic bearings of the present are not the same as those of the past.



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NOVEMBER 29, 1911

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### Combined Curbing and Paving Bids

It is the practice in a number of cities, in asking for bids for paving, to require the contractors to include in the prices bid per square yard a certain—or rather uncertain—number of cubic yards of excavation of macadam and earth, and lineal feet of curb resetting or construction. This practice has so many objectionable features that it should, it seems to us, be discontinued wherever it is now followed. In the first place, engineers are now pretty well agreed (for reasons which have been so much discussed that it seems unnecessary to name them here) that contract items upon which bids for any kind of work are received should be so divided and so well defined that the contractor may know beforehand, without any "inside information," just what is included in each one. The items should also be so classified that any one may be increased or decreased by the engineer without any hardships to the contractor or loss to the city.

Another objectionable feature is the impossibility of comparing the bids received for paving of different classes, or different jobs of the same class, since the square yard price is in each case affected to a greater or less extent by the varying amounts of excavation and curb work. To name only one of

the undesirable possibilities resulting from this, a combination among bidders by which the price of paving is raised may be concealed from the average citizen, who is not capable of analyzing the effect upon the price of a greater or less amount of the other items.

When it comes to a comparison between cities to determine the relative costs of some one kind of pavement such comparison is almost impossible without a more complete knowledge than is often obtainable of just what is combined with the paving in each case. One city reports asphalt paving as costing \$2.00, another as costing \$2.25. No explanation is made of these statements and the average councilman or citizen in the former city would very naturally congratulate himself and the paving department of his city upon obtaining work at low cost; whereas as a matter of fact, paving alone being included in the first item but the second including paving, curbing, gutters and catch basin connections, the latter may have really been the lower priced work. This last reason, that the engineer or department which combines these other items in the paving bids appears to the taxpayer to be paying a high price for pavement, should of itself be an inducement to separate the items and thus obtain the credit of a lower bid for the paving than the lump figure would have indicated.

It is possible that certain State laws and city ordinances concerning the assessment of paving costs among abutting owners are met most conveniently by lumping the items in one bid; but we believe there are few if any cases in which this difficulty cannot be met without the necessity of changing the laws. One of the confusing results of the practice referred to was mentioned in our issue of November 22, where it was stated that the Supreme Court of Wisconsin decided that the curb is a part of the roadway pavement because it had been included in the bid for such pavement.

### Need for Intelligent Officials

REFERENCE has previously been made to the Bureau of Statistics of the state of Massachusetts, which collects statistics of cities as well as data concerning labor and manufactures throughout the state. The director, Chas. F. Gettemy, has called attention to the necessity for more intelligent officials to keep the cities' accounts and records, if these are to be of any value to the citizens, or, in fact, if the cities are to be kept out of bankruptcy. Many of the financial reports of the cities of Massachusetts are almost worthless and contain glaring errors, columns which fail to add correctly, misstatements and a mass of meaningless figures; with much important information entirely omitted.

"The condition of accounts in many of our towns," Mr. Gettemy has reported, "and the attitude of some of the local officials was well illustrated by the following letter received by the Bureau, signed by a town treasurer:

Enclosed please find the report of the town of —, in a condition which I do not like to send in but I can't seem to make it balance.

I have worked at it a good deal, but to no effect, so I thought I had better not put it in ink.

The several items are correct, I am sure, but when bunched they don't jibe.

If you can use this report, all right; if you can't you will have to look up another man to straighten it out. I have worked on it all I am going to.

The debt sheet enclosed is O. K.

"This letter is but typical of others which might be cited, but, while it may be calculated to evoke amusement, it is not without its serious aspect."

There is a growing demand in many quarters for the adoption of uniform accounting and reporting systems in our cities which will give the tax payers real information concerning not only where the money goes, but just what results it obtains. Standard forms of accounting and reporting are necessary for this, and many officials and bureaus are working along this line. But unless the citizens place in charge of their finances and of the various departments which spend their taxes men who are sufficiently intelligent to keep account of the expendi-



tures, the reports will be misleading and useless, no matter how excellent the forms adopted.

Reforms are necessary in both methods of reporting and responsible superintendence of departments and bureaus, if efficiency is to be attained in municipal work.

### ABRASION TEST FOR BRICK

IN our issue of October 4 we referred to investigations made in Detroit by Boiler Inspector McCabe, and his conclusions that abrasion tests of brick did not offer a reliable test as to wearing quality. On October 31 he submitted further statements on this subject to the common council, giving the results of a number of tests for both abrasion and crushing strength. Concerning the necessity for crushing strength Mr. McCabe stated, "The opinion is generally entertained that the compression strength of a paving block is a negligible quantity. This opinion is certainly erroneous, if due consideration is given the characteristics of paving block. This material is entirely without elasticity and fails readily under shock. In the case of elastic paving materials, such as wood block or asphaltic mixtures, their durability is in a measure dependable upon the quality of elasticity.

"In considering the durability of a brick pavement, it will be found that the load on the tire is concentrated and the actual wheel contact is very small, and that often the concentrated live load exceeds the limit of the unit strength of the brick instead of having a reasonable factor of durable service." He cites a pavement in the city, the brick on which showed a compression strength of 6,311 pounds per square inch, over which travel twelve loads daily of an average weight of 19,000 pounds per load, which pavement has worn out in five years.

For the reasons explained, he believes that the crushing strength of brick is fully as important as the abrasion. He finds, however, that the abrasion test and crushing strength test seem to bear no relation to each other; or if they do bear such relation, the brick which excels in the abrasion test is most likely to be deficient in the crushing test. A table of 60 or more tests is given, made on various makes of brick, the averages for each make being given in the table. With only two exceptions, low abrasion percentages were accompanied also by low crushing strength and vice versa; from which it would appear that a brick which passed well in the abrasion test would give poor wear under heavy traffic. The crushing tests of the various makes varied from 4,605 to 6,768 pounds per square inch. A granite block was found to give 14,000 pounds.

In attaching so much importance to a crushing test, the Detroit inspector disagrees with the majority of engineers and others who have been studying the problem for years past. Fifteen years ago tests were made for absorption, cross-breaking, crushing, hardness and specific gravity; but experts have concluded that such tests are unreliable or of little value, and recommend the abrasion test only. The Association for Standardizing Paving Specifications, and more recently the American Society of Municipal Improvements, have made the same recommendation, and the abrasion test has been standardized as to both methods and machine and shot to be employed.

Concerning the matter of crushing, this may be occasioned not only by the vertical weight of wheels on the top surface, but also by the horizontal pressure due to temperature expansion. Where the filler is cement grout thoroughly filling the joints, it may be assumed that the horizontal crushing pressure is transmitted through the entire pavement unless it reaches the point where the grout filling in certain of the joints is crushed thereby. This pressure is then practically similar to a crushing load applied to a slab 4 inches thick and of considerable height and length. The vertical load tending to produce crushing, if the pavement is grouted, is similar to one applied to a slab 4 inches high and of indefinite length and breadth. Under the latter condition the crushing of the slab as a whole would require an immensely greater force than that required to crush the ordinary cylindrical sample 2 to 4 inches square. The crushing in this case must be largely con-

fined to a pulverizing of the surface of the material, or, under very heavy loads, to a destruction of the cohesion of the mass throughout.

In the case of sand filler, however, it is conceivable that the horizontal expansion pressures would not exert any great stress in the brick because of the yielding of the sand; but that on the other hand the vertical load pressures would act similarly to those applied to specimens 2 by 8 inches by 4 inches deep, with little support at the sides, which might therefore crush as does a test specimen.

Another consideration in connection with these two methods of testing is that abrasion may be expected to take place to a greater or less extent under all loads, and consequently that the relative abrasion resistances of the several brick under consideration are an important matter. Crushing, however, either takes place or does not take place. If a brick is capable of withstanding without crushing the maximum load which comes upon it, there is little practical advantage in having it stronger than this; except, of course, the general advantage of a factor of safety in all engineering structures. There can be no question, however, that in certain cases brick are actually crushed by heavy traffic; and it would seem as though it would be desirable either to determine some maximum load per wheel which should be allowed to use brick pavements, or else in some way provide for adapting the crushing strength of the brick to the load which is expected to come upon it. And if the tests made public by Mr. McCabe are not altogether erroneous or misleading, the abrasion test is utterly useless for giving any indication of this characteristic. Based, we presume, largely upon these tests and reports of Mr. McCabe, the special committee on Claims, Accounts and Streets of the Common Council has recommended that specifications under which the city purchases brick in the future be so amended as to provide for rattler, absorption and compression tests.

### INCREASING STREET RAILWAY FARES

At a recent convention of the American Electrical Railway Association there was a general complaint that the profits returned from such investments are far below what the same amount is bringing in other fields, and the Association placed itself on record as stating that it believes there is a widespread need of increasing fares, if adequate service is to be furnished and capital secured to provide for the continued growth of the industry. For securing this end six methods were suggested: One was to retain the present five-cent flat rate, but eliminate free transfers. The second was to retain the present rate, but charge one, two or three cents extra for transfers. The third was to increase the five cent rate, either retaining free transfers, without transfers, or with extra charge for transfers. The fourth method was to establish the straight European zone system without transfers. The fifth method was to establish the zone system where a five cent fare is charged from outlying districts to the central business district, but only a ten cent fare from outlying districts across the business district to an opposite outlying district, eliminating such transfers as would defeat this object. The sixth plan, and that recommended as most feasible, was to establish the zone system with a five cent fare for a large central zone, charging three cents additional to the smaller outlying zone, including with this either free transfers or a charge for transfers. This would make the fare from the center of the city to the outlying zone eight cents, but the local fare in the outlying zone would be five cents.

The retiring president, Arthur W. Brady, in his annual address stated that there were 41,000 miles of electric railways in the country carrying 10,000,000 passengers annually and employing 250,000 men. The gross earnings of these railways are \$500,000,000 and the operating expenses \$300,000,000; while the capital invested is \$5,000,000,000. If we assume these figures to be correct, it indicates that the average earnings of these roads amount to not more than 4 per cent on the investment. No figures are given to indicate how much, if any, of the \$5,000,000,000 is water.

## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

## ROADS AND PAVEMENTS

## Run Good Roads Train

Wilmington, N. C.—The Atlantic Coast Line's good roads train left Richmond, Va., on the morning of November 24 for a trip over the entire system, going through the States of Virginia, North and South Carolina, Georgia, Florida and Alabama, ending on February 22, next. The first stop out of Richmond will be Petersburg, where two hours and a half will be spent. The train will be in Richmond several days preceding the start and will be open for the benefit of the delegates to the big good roads convention that will be in progress there at the time. The Coast Line owns the train, which will consist of three good roads cars and a private car. One of the cars will be fitted with good roads machinery operated by electricity and will also have on board samples of various good roads materials. The other good roads car is to be used for the purpose of giving lectures and presenting stereopticon views. The private car will be used as the living quarters of the lecturers and Coast Line employees during the period the train is out.

## City Buys Machine to Test Paving Brick

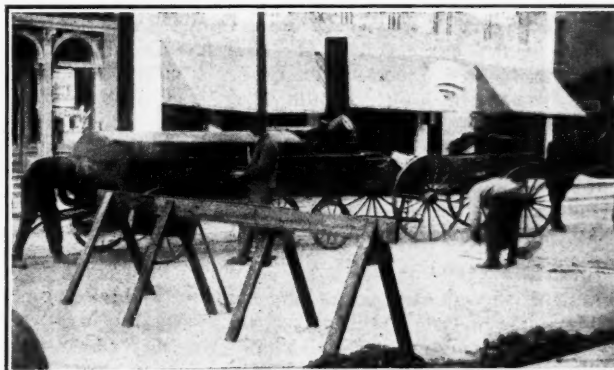
Rochester, N. Y.—City Engineer E. A. Fisher has announced the purchase by the city, for use by the Department of Public Works, of a brick "rattler," or brick testing machine, from the Heatherington-Berner Company, of Indianapolis. The machine has been included in the exhibit of road building equipment at the convention of the American Road Builders' Association in Convention Hall. The brick testing machine now in use by the Department of Public Works has not proven satisfactory and in making this purchase it is the purpose of the city to procure a machine which will give a uniform test of the bricks used for paving purposes. The machine has been adopted as a standard by the American Society for Municipal Improvement and by the Paving Brick Manufacturers' Association.

## To Erect Wood Treating Plant

Tacoma, Wash.—The establishment in Tacoma within the near future of a wood treating plant, which will also practically mean a plant for the manufacture of wood block paving, seems to have prospect of becoming an actuality as the result of a recent meeting of the trustees of the Commercial Club and Chamber of Commerce, Mayor Seymour, Commissioners Weeks, Freeland and Pettit, President Everett G. Griggs and Manager Leonard Bronson, of the National Lumber Manufacturers' Association. Geoffrey Winslow, Western agent for the Carbolineum Wood Preserving Company, who have the contract from the city of treating the timber to be used in the construction of the two city bridges at Eleventh street and over the Puyallup River, laid his plans before the meeting. Under the city contract the bridge timber is to be treated with creosote. Mr. Winslow stated that if the specifications were changed so as to allow treatment by the carbolineum wood preserving method, which he claims is superior, his company would erect a permanent plant in Tacoma at once. He also offered to treat, by the carbolineum method, and lay free of cost to the city one whole block of wood block paving as a sample, and Mr. Griggs, who favored the wood block scheme, said that on behalf of the local lumbermen he would promise the city that the necessary wood for the paving would be supplied free. Although definite action could not be taken it was apparent that the proposed change in specifications could be made without difficulty, the architect engineers, Waddell & Harrington, having stated that they are willing to make the change if the city desires it. It is said that the initial cost of the proposed plant would be about \$15,000, employing at the start at least two men. As the wood block pavement grows in popularity the plant would be enlarged for that purpose.

## Repair Street Economically with New Machine

South Bend, Ind.—Two months demonstration of the city's new asphalt repair plant, the purchase of which was made possible by the enactment and enforcement of the new vehicle tax law, has shown this method of street repairing is both economical and practical. A gang of men



Courtesy South Bend Tribune.

SOUTH BEND'S ASPHALT REPAIR PLANT

has been working constantly with the plant since it was purchased, and last week Street Commissioner James Butler reported that the thoroughfares paved with asphalt in the city are now in better shape than ever before. The Hooke asphalt reparer is a simple device, consisting chiefly of a huge vat, which contains the asphalt when the gang is at work on the streets. The asphalt tank is over a fire box, from which the material is heated sufficiently to be placed on the streets.

## Phoenix Uses Bitulithic Pavements

Phoenix, Ariz.—Phoenix has followed El Paso's example in putting down its paving and has selected bitulithic. The Barber Asphalt Paving Company is laying the pavement, but the people of Phoenix insisted that the company use bitulithic for the top coating and this is being done, the Barber people paying the patentees of the bitulithic product a royalty for the use of the process. The foundation of the pavement here is concrete—crushed rocks mixed with cement. The paving alongside the rails and between the tracks of the car line is with vitrified brick, as in El Paso.

## San Antonio Lays \$55,000 Worth of Asphalt Paving

San Antonio, Tex.—Work will commence at once on the \$55,000 worth of asphalt paving recently authorized by the city council. By the time the concrete foundation is laid on Pecos street it is expected the traction company will have sufficient material on hand to start some of the heavier work. Mayor Callaghan says the work will be pushed as rapidly as weather conditions will permit. He hopes the work will be completed early next year. Including the paving authorized by the city council at its last meeting the city will add half a dozen miles or more to its system of asphalt paving in the next few months. Fully fifteen streets will be improved.

## Mountain Road to Be Constructed

Olympia, Wash.—At a recent meeting of the State highway board in Governor Hay's office it was decided to accept the report of W. J. Roberts, state highway commissioner, on state road No. 10. This means the great Northern railway will build a 10-foot roadway from Wenatchee to Pateros in lieu of the state road it wants for a right of way in the Okanogan country at a cost estimated at \$125,000. On the mountains the road will be 24 feet wide and for a distance of one-eighth of a mile. Provision is made for making the highway 24 feet wide for the full distance at a later date. The trade means the people of the district will profit to the extent of about \$75,000.



### Knoxville-Chattanooga Plans Fine Highway

Chattanooga, Tenn.—Few Chattanoogaans realize that work is about to be started on one of the finest pike roads in the south between this city and Knoxville, which, when completed, will place these two cities into much quicker automobile connection with each other and which will be an immense help to the farmers and those who live in the small towns between the two cities. Work on the pike will be started within the next four or five months, and the prospects are that it will be fully completed by next fall. So far the only county between Chattanooga and Knoxville which has not actually voted the bonds for the road is James. It is expected that this county will vote \$75,000 in bonds at the next meeting of the quarterly court. If James fails to vote the \$75,000 it will leave the pike minus seven miles of macadamized roads. Within the past few months McMinn county has voted \$300,000 for roads, Loudon county has voted \$100,000 and Monroe county \$300,000. Bradley county already has as fine a system of roads as any county in the State, and those mostly interested in the success of the pike will be well satisfied if Bradley keeps her roads to the present high state of efficiency.

### Chief Engineer Holds School of Instruction for Inspectors

Newark, N. J.—For the purpose of brushing them up on various provisions of street paving contracts, Chief Engineer Sherrard has had before him twenty-eight paving inspectors. With the aid of blackboard and chalk, Mr. Sherrard instructed the men on their duties. He plans to make this the first of a series of similar lectures.

### To Prevent Constant Cutting of Streets

Los Angeles, Cal.—Displeased with the patching done by the public utility corporations and the city's water department after laying pipes and conduits in paved streets, the council has instructed the legislation committee and the city attorney to find a legal way to remedy the trouble. The method suggested was an ordinance to require the corporations and the water department to lay service pipes to the curbs when they lay their mains and to lay the mains before streets are paved. In the general discussion in the council the city's street department came in for criticism because the patches it has put on the paved streets have not lasted as long as the councilmen thought they should. The board of public works asked the council for permission to purchase the necessary amount of surface mixture for the year, but the council wanted to know what this mixture was to contain before permission was given.

### Knoxville to Have Twenty-Two Miles Paved Streets

Knoxville, Tenn.—This year's paving, which is the only paving done by the present city administration, will cost the city about \$65,000. To secure this fund the city has issued short term bonds running five years, which will take a levy of 5 cents on the \$100 each year to retire the bonds. This, when completed, will give the city of Knoxville more than twenty-two miles of paved streets. Until the year 1906, the city did not have the abutting property law and only three miles of streets were paved. The first three miles of streets were paved and paid for by long term bonds. This was done in 1892, and the city is still paying the interest on the bonds, and will in a few years be compelled to pay the principal. The remainder of the paving done during the years 1906, 1907, 1908 and 1909, and the city's part is paid for, except two installments of the short term bonds for eight miles of paving that was laid in 1909, and the city in 1912 and 1913 will retire these bonds in two payments that amount to \$95,000, that will take about a 10-cent levy. No city in the south has made more rapid progress in paving its streets than Knoxville has in the last few years. In 1906 the abutting property law, after being declared unconstitutional three times, was again tested in the supreme court and declared constitutional. This was a test suit and was brought by Mayor W. H. Gass' administration in 1905. At the close of that year Asylum avenue, Walnut street from Union avenue to the east approach of the Asylum avenue viaduct was paved. When the paving is completed it will make a total of about twenty-three miles of paving, all of which was done under the abutting property law. It is estimated that the new construction will cost \$75,000.

### Cold Wave Holds Up Paving

Chicago, Ill.—There are several frost-bitten paving jobs in Chicago which would not have existed had the cold snap that seized the city held off a little longer. As it is the paving in Clark street in the loop district just missed the cold snap, the work being finished on it just before the terrific rainstorm that preceded the cold wave. Work has been started tearing up West Madison street from 48th avenue to 60th avenue to prepare for more paving when the weather moderates. "If the cold snap had held off another week," said John B. Hittell, chief engineer of streets of the board of local improvements, "we would have had everything in fine condition. Now we will have to wait until the weather warms up a little to complete these jobs."

### New Augustine Repaves Streets

New Augustine, Fla.—The eleven carloads of shell which have been received from New Smyrna are to be used in the improvement of the streets of New Augustine and work upon the repairs is to begin at once. County Commissioner Rogero has been endeavoring for some time to secure a few carloads for the repair of several of the streets of the little city, as some are in bad condition. The improvement will be a notable one and will add much to the attractiveness of New Augustine. The mound shell is free from the bad odor which accompanies fresh shell and will also grind down to good pavement much quicker than is the case with fresh shell.

### \$44,000,000 for Good Roads in the South

Washington, D. C.—Nearly \$44,000,000 has been spent in road improvement by the Southern States alone during the present year, according to Secretary of Agriculture Wilson. This enormous sum is made up by expenditures in the various States as follows: Alabama, \$3,404,000; Arkansas, \$2,450,000; Florida, \$1,505,000; Georgia, \$2,500,000; Kentucky, \$2,500,000; Louisiana, \$1,132,354; Maryland, \$2,250,000; Mississippi, \$3,130,000; North Carolina, \$4,505,000; Oklahoma, \$1,505,000; South Carolina, \$1,100,000; Tennessee, \$3,900,000; Texas, \$7,600,000; Virginia, \$4,004,000, and West Virginia, \$1,625,000.

### Mile Posts Being Put Along Hamblen's Pikes

Morristown, Tenn.—The Hamblen County pike roads commissioners are installing mile posts on all of the main macadam roads throughout the county. One hundred concrete mile posts have been distributed over the principal roads, the only exceptions being the White Pine and Valley Home roads. These posts are now being painted, and each will bear on its face the number of miles to the nearest towns.

## SEWERAGE AND SANITATION

### Two Big Sewer Projects

Washington, D. C.—Two big sewer construction projects will be completed before next summer if the present plans of the sewer department of the District materialize. They involve the extension of the east side interceptor along Bunker Hill road and the construction of the outlet section of the Petworth trunk sewer, from the Piney Branch trunk sewer to Georgia avenue. Each project will cost about \$25,000. The extension of the east side interceptor will be from 20th street east to 9th street east, or a distance of between 6000 and 7000 feet. The interceptor when completed will provide for all the drainage of the District along the west side of Anacostia valley. Residents of Petworth have been endeavoring to secure the construction of an outlet section for the Petworth trunk sewer, as the improvement is a much-needed one.

### Disposal of Bronx Valley Sewage

Yonkers, N. Y.—The plan of Engineer A. P. Hartmann for the disposal of the Bronx Valley sewage has been referred to Assistant Attorney-General McReynolds for final government sanction. The plan contemplates the extension of the sewer outlet to the bulkhead line in the Hudson River and for the construction of four screening tanks in the Tibbits Brook Valley. Solids will be removed in two of these tanks and the liquid will be allowed to flow through the others and then into the outlet leading to the Hudson.



### Plans City Smoke Zones

St. Louis, Mo.—A new idea for a solution of the vexing smoke problem in St. Louis has been advanced at a meeting of the Board of Directors of the Real Estate Exchange. It came from a member who lives on the North Side and who believes something should be done to relieve the manufacturers of that section from being pressed too hard by the smoke inspector and anti-smoke crusaders. He proposes the city be divided into smoke districts. Within these districts the smoke ordinance should either be suspended entirely or so modified that a factory owner would not be prosecuted and fined every time his fireman gets careless and lets his stacks belch some black billows of vaporized soft coal, it is suggested. The advocate of smoke districts would have these districts so located that they would not encroach upon portions of the city which are, in the main, residence districts, believing the greater home sections are entitled to some protection from smoke. This could be done, he said, by an ordinance laying off certain smoke zones in districts where many factories are congregated. His letter said, in effect, that North St. Louis was more interested in getting more factories, and the people employed in the factories, and had more concern in holding what plants they had than in keeping white collars and lace curtains clean. A too rigid smoke law drove away factories, he contended.

### Want Night Removal in Newport

Newport, R. I.—The Newport Improvement Association, composed of prominent members of the summer colony and prominent citizens of Newport, has urged the Board of Health to suggest to the Board of Aldermen the advisability of collecting garbage at night, so that the nuisance of all unpleasant odors and sights will be removed from the highways while citizens are about.

### Engineers Inspect Work on Sewer

Syracuse, N. Y.—City Engineer Henry C. Allen and Chief Engineer Glenn D. Holmes of the Intercepting Sewer Board last week made an inspection of the work under contract. The cold weather has interfered somewhat with operations, but it was considered that good progress is being made on both the Onondaga creek and Harbor brook intercepting sewers. The former has been practically completed nearly to Tallman street, and it is expected that the Harbor brook sewer will be finished this year. Progress on the Onondaga creek is being hindered by high water.

### Dallas to Pass Pure Food Ordinance

Dallas, Tex.—Fruit and other similar edibles exposed for sale on local stands must be screened and kept on shelves which are at least two feet above the level of the sidewalk. This is one of the new requirements which is to be written into the local pure food ordinance. Such vegetables as must be peeled or skinned before being used, however, will not be required to be screened. It is expected that the proposed changes will be approved by the Board of City Commissioners and will become effective within 30 days, or after due notice has been given by the city chemist and pure food officer, Dr. N. C. Hamner.

### Report of Women's Municipal League

Boston, Mass.—At the last monthly meeting of the street and alley department, held at Brooke House, Miss Mabel Frost, the inspector, spoke of the unsightly and unsanitary condition of the Fenway dump. Acrid smoke from continuous bonfires, papers blowing wildly about and all sorts of rubbish, from old kettles to bed springs, make that part of the Fenway a most unsuitable place for fine colleges and other buildings situated there and spoil the enjoyment of the adjacent parks. It is fortunate, she said, that the specifications for the new waste disposal contract call for the abolishing of inland dumps. Many complaints have been investigated. In East Boston, in a neighborhood where tuberculosis is prevalent, one contributing cause was found to be an old cellar hole filled with stagnant water, mixed with garbage and rubbish. The board of health has served a notice on the owner calling upon him to remedy this condition. Another problem which it is hoped may be solved with the assistance of the board of health is that of an alley, piled high with refuse and rubbish, close to a basement bakery. The baker complains that his opposite neighbors are responsible for the accumulation.

### To Purify the Merrimac River

Lawrence, Mass.—Plans for the purification of the Merrimac River have been prepared at the office of the State Board of Health and the first step in the proposed work is expected to be taken this week when the matter will be taken up with the Haverhill municipal council. It is planned to extend every sewer now entering the Merrimac River to the middle of the stream, where the stronger current will carry away the flow and eventually make the shores, now filthy in the extreme, as clean and sanitary as modern conditions will permit. Coincident with the demand on Haverhill to do its part towards cleaning up the river, it is stated that there will be a demand made that mill corporations in Lawrence and Lowell destroy their washings, their grease and other defilement, before it reaches the stream. The whole scheme will be worked out along the lines suggested by Senator Arthur L. Nason of Haverhill in a bill of two years ago.

### Expert Talks on Sewage Disposal at Dallas

Dallas, Tex.—It will take a year to build a sewage disposal plant of a capacity of 15,000,000 gallons such as will be necessary for the city of Dallas. This, along with some other interesting information, was given the board of city commissioners by George W. Fuller, an expert on sewage disposal, when he appeared before the board. He said that a filtration plant of 15,000,000 gallons capacity could be constructed within from eight to ten months. It should take three months for plans and specifications to be prepared, he said. That the city will put in plants with capacities of 15,000,000 each was possibly indicated by questions Water Commissioner Nelms asked in regard to plants of that capacity. Most of the time was taken up in discussion and questions, after which the expert, with the mayor and commissioners and City Engineer J. M. Preston, visited the Turtle Creek pumping station.

### Public Towel

St. Louis, Mo.—The abolition of the public towel is aimed at in a bill introduced in the city council by Dr. Paul R. Fletcher. The councilman said a towel in common use is far worse than a public drinking cup, which has already been legislated against. "There are diseases communicable by the towel which a person probably would never catch by the drinking cup," said Dr. Fletcher.

### Typhoid Infection Traced to Outside Sources

Hudson, N. Y.—At the last monthly meeting of the board of health the health officer reported 16 typhoid cases in past month, half of these had been positively traced to outside sources of infection, and while in the other cases the sources could not be traced as clearly, the facts indicated that none were due to any pollution of local water supply.

### Fumigation of Buildings to Be Made Mandatory

Hutchinson, Kan.—Dr. J. W. Young, city physician, believes that the best way to combat a disease is to prevent it. In this connection he stated that every possible precaution would be made by his office to prevent a contagion similar to the one that existed in the public schools last year. He thinks that all public buildings should be thoroughly fumigated at stated intervals. In conjunction with Mr. Graybill, commissioner of health, systematic efforts will be made to keep all public buildings in the city thoroughly sanitary. Fumigation will be insisted upon whenever deemed necessary. The number of contagious diseases in the city is below the normal at the present time.

### New System in Operation

Newport, R. I.—The mayor and board of aldermen have made an official inspection of the new pumping station. Street Commissioner Sullivan reporting that everything seemed to be in good working order, and the contractors, Scannevin & Potter, having completed their contract to his satisfaction, the pumping station was formally accepted and went into commission, and at once some two and a half miles of new sewers were made effective. The street commissioner has given notice to those whose places are drained by the new system that he is ready to issue permits for entering the sewers; the pumping station is ready to receive the sewage. A number of citizens visited the station during the afternoon and the working of the pumps was explained to them.

## WATER SUPPLY

### Water Department Confronts Electrolysis Problem

Hartford, Conn.—The water board has found the electrolysis question a serious one, and conditions in different parts of the city where the current leaking from the trolley rails have demoralized the services pipes are so bad that the board has decided that a stop to the conditions must be insisted upon. The board has had an electrical engineer looking into the conditions and the board will take up the matter with the street board. It will be demanded of the trolley company that it protect the pipes of the department from the ruinous effects of the current. The current eats into a main until it resembles a sieve. Samples of the demoralizing effect of the current, coming into contact with the water pipes, may be seen at the City Hall. In Commerce street, where the department has just finished the laying of a 24-inch main, there is so much stray current floating through the street and being carried along by the buried rails that workmen have had shovels burned up by coming into contact with the water pipe, while they themselves were protected only by the wooden handles. Some years ago the trolley company was allowed to bury a line of steel rails in this street to carry back the current. These rails are said to be the cause of the trouble, and the city will endeavor to compel the trolley company to take them up. The water department has received a request from the trolley company that it be permitted to put wooden plugs in the joints of the main in Commerce street for insulation purposes.

### Thaw Water Mains with Electricity

Spokane, Wash.—Manners of using electricity for thawing and opening ice-clogged water mains served as topics of general discussion taken up in the last regular weekly meeting of Spokane chapter, National Association of Stationary Engineers. Lectures that were educative and interesting were given on this subject by Grant Tuttle, engineer of the Washington steam laundry, and Elmer W. Lachner, engineer of the Rookery building. It was stated that the city of Duluth, Minn., has secured a portable electric thawing plant for this purpose. The ice within water mains is melted by connecting the pipes with electrical current which "honey-combs" the ice.

### Water Plant Burned

Corning, Cal.—Fire, supposed to have been caused through defective wiring of the motor, has destroyed a private water supply plant owned by E. Watkinson. The plant supplied sixty residences, comprising about one-fourth of the town. The plant was worth \$1,500 and was insured for \$1,000. It consisted of a large tank, pump house and ten-horsepower motor.

### Texas Sand Will Cheapen Filter Plant Construction

Fort Worth, Tex.—The discovery of filter sand near Mexia will in all likelihood decrease the cost in the operation of the filter plant that is now being constructed by the city. Much of the filter sand used heretofore has come from Minnesota and far northern states and the shorter distance will save much in freight charges. December 15 is the date set for the actual beginning of the filtration of water. Piping has been laid and both an inlet and an outlet to the river have been established. The filter is being speedily installed and the Pittsburgh Filter Company guarantees that the water that passes through the filter will test 98 per cent. pure. The water coming in through the plant from the river is settled through the duplicate settling basins. The clearest water flows over the basins and into a trough which passes it into the main part of the plant, treating it at the same time with a compound of alum and lime. The resultant compounds settle to the bottom and the lime and alum remove impurities in this way. Following this process the water passes into the filter beds. The filter beds vary from a fine sand to a thicker gravel and after passing through the beds the water accumulates in the pure water basins. In cleaning the beds—which is done frequently—the reverse process is used and pure water is forced backward through the beds, carrying the dirt and sediment to the troughs and over-flowing back into the river. Compressed air will loosen the sand from time to time.

### Contractors to Pay for Broken Pipe

St. Paul, Minn.—A new form of contract, requiring contractors making street improvements to reimburse property owners for water pipes damaged by faulty workmanship, has been submitted to the water board. In former contracts of this nature the contractor was not liable for damages, and the water board had to charge the expense of making the repairs to the property owners affected. As neither the water board nor property owners were to blame for the damage, there has been some difficulty in collecting claims for damaged pipes.

### Water Works Engineers to Be Placed Under Civil Service

Hamilton, O.—An ordinance was passed by the city council providing for the four chief engineers in the water works and electric light plant to be placed under the civil service. The ordinance was signed by Mayor Rothwell. It is designed to keep the men out of politics.

### Corpus Water Mains Sink at Sea

Corpus Christi, Tex.—A shipment of water mains and material for the sewerage system destined for this city was sunk in the Atlantic Ocean recently, according to a letter received here from the firm making the shipment. The order had been routed by schooner to Point Bolivar, and thence by rail to this city.

### Excellent Water From City Wells

South Bend, Ind.—Samples of water taken from the wells at the north and central pumping stations and from wells on the site of a proposed new station in Portage park were classed as excellent by the state department of chemistry, according to reports from Indianapolis received by Charles Van Lake, city food inspector. The samples were the first submitted to state authorities this year by the South Bend water department. In line with the plans for the new Portage park station officials considered it feasible to thoroughly test the water from the municipal wells in this section. The tests of the other water were made that the officials might have a knowledge of the quality of the water from the other stations, as well as at the present time. The state officials were especially well pleased with the sample of water from the Portage park wells. They classed it as "very good water," which is considered the highest possible recommendation from the chemists. The water, which came from a 100-foot well drilled several years ago, has .04 iron in it, is odorless, has slight turbidity and little sediment and contains .282 total solids, according to tests of the state officials. Like the water taken from the wells in Portage park, the water from central stations was pronounced "very good." The sample which was taken from wells at the north station was also quite satisfactory, state authorities classing it as "good water."

### City Wells to Help Water Supply

Mt. Vernon, N. Y.—That the work of sinking the new deep rock wells for an emergency water supply for the city is still going on, was shown when a report from the board of water supply told the No. 5 well was driven then to a depth of 424 feet and that it would be driven to a depth of 450 feet, when a test would be made which it was thought would show good results. The No. 7 well, or the well being driven under a contract and a guarantee with A. L. Washburn, the contractor, to yield 100 gallons a minute or no pay, had to be abandoned after Mr. Washburn dynamited it some time ago. The force of the explosion at the bottom of the well caused the earth to cave and fill in the boring, making the well useless. Soon after this well was found to be an impossibility Mr. Washburn set to work on another; this well being known as the "No. 8 Washburn well," and is being driven under the same contract as the No. 7; that is a guarantee from the contractor to produce 100 gallons a minute from the well and to sell to the city with all machinery, pump house, etc., at \$2,000 or in the event of the well falling below a 100 gallon per minute capacity, the contractor to bear all of the expense of drilling, etc. Mr. Washburn's new well was down to a depth of 115 feet, 89 feet of which were through earth, and the remaining 26 feet through solid rock when a three-hour test of the well showed a capacity of 71 gallons a minute and Mr. Washburn feels that a few more feet of depth will give the required flow of 100 gallons a minute.



### Bloomington's Artesian Water Works System

Bloomington, N. Y.—The Bloomington artesian well system of water works is working perfectly. The pumps, which are of the Goulds manufacture, are pumping 100 gallons of water per minute into the new reservoirs situated above the village and all the connections with the mains in the streets have been made. There are two principal mains of feeder pipes through the village and one is already filled with water, while the second is being tested. As may naturally be expected with a new system of water works some leaks have appeared, but they are already attended to and the system is proving to be perfectly satisfactory. Compressed air is used to force the water from the depths of the well to a reservoir in the pumping station and the water is pumped from this reservoir to the large reservoir on the hill. The operating power is electricity supplied by Paul Smith's Electric Light and Power and Railroad Company. The Gould pumps which are six cylinder, have a capacity of 200 gallons per minute.

### Waterworks Converted into a City Aquarium

Philadelphia, Pa.—The first section of the new public aquarium in the buildings of the old Fairmount water works is now to be opened to the public, and, although the collection of fish and aquatic animals will be small at first, it will be increased as rapidly as money can be procured and the work done, and it is hoped to have in time one of the most complete collections in the country. The bulk of the exhibit will be housed in the two large buildings on the river bank in which the big turbines and condensers were located. The grounds around the buildings will also be improved. The old picturesque water tower will be repaired and a beautiful cascade constructed beneath it, the water falling from a height of about 100 feet into the seal pool.

### Filtered Water for All

Philadelphia, Pa.—Filtered water has been supplied for the first time to the northwest section of the city, which has heretofore been supplied from the old Queen Lane water works, now converted into a filtration system with a capacity of 70,000,000 gallons daily. This announcement was made by Chief Dunlap, of the water bureau, who recently appeared before the finance committee of councils to assure the members that there is no question of efficient workmanship, or failure to comply with the specifications involved in the litigation over the legality of the final supplemental contract with the Millard Construction Company, now known as the Keystone State Construction Company. The committee, on being asked to pay for the work completed, was informed that there is work to the amount of \$25,000 or \$30,000 remaining to be done. The plant is not now running to its full capacity, but is supplying ample filtered water where 25,000,000 gallons of raw water chemically treated was being served daily. The total cost of the plant will be \$2,000,000.

### School Children Suggest Names for Reservoirs

Holyoke, Mass.—The long list of names for the new reservoirs offered by the school pupils throughout the city was carefully gone over by the board of water commissioners which was inspired by the offer of prizes and despite the number of appropriate names suggested no decision was arrived at. Three hundred and ninety-two communications were received which included many different titles of different people well known locally and the task of selection will doubtless prove a difficult one. Among those most prominently mentioned were Avery, after the one-time mayor, Hardy, after John D. Hardy, Corner or Alice Corner, after the long time assistant registrar of the water department and who was killed in a runaway accident some time ago, H. B. Lawrence, Manhan, Pearson, Tighe, after the former city engineer, Valley, William Skinner, William Whiting, Taft, Southampton, Mt. Tom, John Holyoke, White, King Philip, Lincoln, Harkins, John Delaney, Merrick, McKinley, Clarke, Chapin, Kirkland, Sylvan Dale and Sparkling Waters, not forgetting the water commissioners. The names were submitted to the commissioners last summer. Two names which met with great approval by the board were "Carshelyn" and "Cardoyshe". The first name being formed by combining the first few letters in the names of Commissioners Carmody, Sheldon and Lynch. "Cardoyshe" being the combination of the names of Messrs. Carmody, Doyle and Sheldon.

## STREET LIGHTING AND POWER

### Municipal Light Plant Shows Profit

South Norwalk, Conn.—South Norwalk's municipal electric light plant was so successful in the year just ended as to turn a gross profit of \$26,417.35, and the new fiscal year begins with a substantial reduction in rates for public and commercial lighting and power. This profit is shown despite general business conditions not quite so good as the year previous and a repair account over \$1,500 larger than that for the preceding year. During the year the bonded indebtedness and outstanding notes of the plant have been reduced to \$42,500, with temporary operation liabilities of a little more than \$4,000 soon to be liquidated, while the plant's assets now amount to \$195,915.43, or \$30,740.46 more than they did a year ago. The bulk of the profit was made on commercial business, and because of this come the reduced rates which are by way of a dividend to the taxpayers. The former rates were so low that the South Norwalk plant has been quoted as a model all over the country. The electric commissioners of the city purpose replacing arc lamps with more modern tungsten lamps in order to effect improved lighting without being obliged to extend the plant, which has almost reached its limit of capacity to generate current for this service.

### New Boardwalk Is Well Lighted

Atlantic City, N. J.—Work on the erection of the new Boardwalk lighting standards has been begun by the Atlantic City Electric Company, foundations being constructed for the new lamp posts between Kentucky and Indiana avenues. The contract price for the new standards is approximately \$35,000 and the new illumination is expected to be ready for the opening of the Lenten season. Standards nearly 25 feet high are to be erected at the avenue intersections, while smaller standards will be erected at intervals of about 40 feet.

### Flaming Arcs Given Trial

Council Bluffs, Ia.—Citizens of Council Bluffs recently witnessed the first trial of the new flame arc lighting system. The new lights seem to be a success, and favorable comments were general. Manager English, of the lighting company, while regretting the fact that a few of the lights were not yet installed and several were not working as they should, expressed himself satisfied with the lights. The failure of the manufacturing company to get several transformers here resulted in the use of several ordinary arc lights where the flaming arcs will be installed. Old poles that could not yet be used stood in the way of the iron gooseneck poles and the new lights could not be attached to the underground wires. The lack of transformers made it impossible to attach them to the overhead wires. Some of the lighting company's employees were kept at work until nearly midnight readjusting lights and getting them to burn as bright as they should. The entire string of overhead flaming arcs are now strung from Sixth to Sixteenth avenues on Main street.

### Councilman Suggests Municipal Conduit System

Cleveland, O.—To rid Cleveland of overhead electric wires of every description, including trolley wires and telephone, telegraph and electric light wires, Councilman Townes will offer a resolution at the next Council meeting calling for a report from Service Director Lea as to the advisability of authorizing the issue of bonds for the construction of a system of municipal conduits large enough to enable all the public service corporations to have underground service. He believes that the plan should be worked out gradually, so that the expense will not fall upon the city at one period. Townes believes that the street railway company should be given underground facilities by the city so that all trolley poles and wires could be removed as in the City of New York. Townes said that the conduit franchises which the Cleveland Telephone Company hold would expire in about three years and that for this reason the city should take up the entire proposition at this time. With the wires underground there would be no more danger during storms, and the city would soon receive returns on its investment, as it has been found in other cities that there is considerable profit for municipalities in improvements of this character.



### Pomona to Have Direct-Current Arc Lights

Pomona, Cal.—The Southern California Edison Company is rearranging its street lighting circuits in Pomona and in the near future will install 26 direct-current arc lamps in the business district. These will be burned all night long instead of on the moonlight schedule as formerly. At the same time a new system of incandescent street lights will be put in operation. The present 16-candlepower incandescent lights which are now placed on each pole will be replaced by 32-candlepower Tungsten lamps on every other pole.

### City Inspection of Gas Meters Planned

Tacoma, Wash.—Mayor Seymour is considering an amendment to the weights and measures ordinance to provide for the testing of gas meters by the city to determine if the meters read true. Objections have been raised that the cost of inspection would be greater than the accrued benefits. Mayor Seymour said that Manager Hyde, of the Tacoma Gas Company, favored the idea of the city testing its meters. Mr. Hyde was willing to take out the meters and bring them to the City Hall for testing purposes.

### Washington Installs Many New City Lights

Washington, D. C.—Washington city will be better lighted this winter than ever before in its history. With the big task of installing nearly 800 new 100-candlepower incandescent lamps on several streets of the capital completed, announcement has been made that additional illumination is to be furnished Fourteenth street from Thomas Circle north to Florida avenue. It is planned to double the number of arc lights on this section of Fourteenth street and place them alternately on both sides of the thoroughfare rather than on one side, as is the case at present. On Massachusetts avenue alone 253 lamps of the increased candlepower were installed, this section being one of the last to be improved. The lamps are on posts of special design.

### New Equipment for Jacksonville "White Way"

Jacksonville, Fla.—New equipment in the way of Tungsten lamps and frosted globes are being put on every ornamental lamp post on Main street; thus Jacksonville's original "Great White Way" is to be in splendid shape for the winter. The Main Street Improvement Association, composed of property owners on this street, was organized January 1, 1909. George W. Clark has been continuously elected president, and no one has done more to keep up this "White Way" than he. This association has paid the city plant over \$3,000 for current alone. It has never called upon the city for any help or assistance in any way, preferring up to this time to show its public spirit by maintaining this enterprise out of its own funds. There have been only a very few of the property owners who have failed to pay their assessment. Those who have failed to pay have had their amounts paid by Mr. Clark and others. The association will keep up this "Great White Way" during 1912, and it hopes that in January the usual ready response will be made by property owners.

### Installing Flaming Arcs and Pressure Gas Lamps

St. Paul, Minn.—At a recent mass meeting of Selby avenue property owners at the Angus opinion was unanimous that Selby avenue should be given better lighting facilities, and sentiment largely favored the new flaming arcs. Two Selby avenue property owners said they favored the new type of lamp, but they objected to having poles placed on the avenue again. They would approve the new lights if the wires could be laid underground. The Selby avenue residents want the new lights installed from Summit avenue to Victoria street. The Board of Public Works has agreed to install flaming arc lights from Summit to Dale street after the first of the year, and later may extend the service to Victoria street. In connection with the Selby avenue lighting, City Chemist Roehrich may suggest that the territory between Dale and Victoria streets be provided with pressure gas lights. He said these lights are as satisfactory as the new electric lights, and the city could well afford to give them a trial. According to the City Chemist, many German cities are now replacing electric lights with pressure gas lights, and they are being installed in several cities in the East.

## FIRE AND POLICE

### Fire Inspectors Wear New Badges

Newark, N. J.—Inspectors of the Bureau of Combustibles and Fire Risks are now wearing new badges, new cap fronts and sleeve chevrons, designed to aid them in letting the public know what the fire prevention department's aim is. The badges are worn outside the uniform coat like a policeman's.

### Recommends Closer Theater Fire Guard

Wilmington, Del.—Addressing City Council on the necessity for better precautions in the playhouses of this city, Councilman Weller E. Stover said: "If ever a panic or fire starts in any of the local theaters the result will be worse than that in Chicago a few years ago." Mr. Stover declared all the moving picture machines should be enclosed in fireproof booths, as provided for by law; that crowding should not be allowed about the entrances, exits and aisles, and that the police should close all places where these rules are violated. "Some one is at fault," said Mr. Stover, "but it is not for me to say who." A special committee was named to investigate the theaters and report recommendations at the next Council meeting.

### To Teach Citizens Location of Alarm Boxes

Boston, Mass.—Mayor Fitzgerald has called Fire Commissioner Daly into conference to discuss the report submitted by the Mayor's special fire commission. He is particularly impressed with the feature of the report which recommends a campaign of education to impress the public with the need of knowing the location of the fire alarm boxes and of understanding how to sound an alarm. He has asked Mr. Daly to have the district chiefs and the fire captains map out a plan for this service and also to work out the problem in relation to a possible relocation of many existing fire alarm boxes and the best locations for additional ones that the Fire Commission believes are needed.

### Fire Protection Complete

Los Angeles Harbor, Cal.—The new salt water system for protection in the business district is practically completed, only a few of the hydrants remaining to be placed. Chief Archie J. Eley, of the Fire Department, has made an inspection of the work and arranged for the installation of the telephones which are to supplement the new system.

### Will Condemn Old Firetraps

Superior, Wis.—The recommendations of Fire Chief Johnson that all of the old frame structures on Tower avenue below the Omaha Railway tracks be condemned will be approved by the special committee appointed by Mayor Crumpton. The committee visited the places which the Fire Chief would have condemned, and in practically every instance the committee was of the opinion that the structures should be torn down. There are some buildings so situated that they might not be a great menace to surrounding property, and in such instances the structures may escape condemnation. In case the buildings are condemned the owners and tenants will be given a year's time in which to vacate the structures.

### Value of Large Water Main Demonstrated

Council Bluffs, Ia.—Members of the Fire and Police Board, Water Commissioners, Councilmen, insurance men, firemen and dozens of spectators were present when the new water main on South Main street was tested. The test was made at the corners of Tenth and Eleventh avenues, near the Pioneer Implement Company's building. Hose lines were attached to the new fire hydrants on the 12-inch main, just placed, and to hydrants on the old 6-inch main. The test was made first with one hose on each line. Then two lines of hose attached to each hydrant were tried. The stream from both pipes on the 12-inch main hydrant was 165 feet high, going 66 feet higher than the Pioneer building. That height was made while the fire pressure was on. Under ordinary pressure the water went much higher than the building. With hose attachments from hydrants on Main and Sixth streets there can now be eight streams of water turned on any corner building on South Main street. On account of the large main there would be no serious difference in the pressure even if eight hose lines were attached in the same vicinity.

**St. Louis Officials Praise Efficiency Bureau**

Philadelphia, Pa.—Lieutenant Lewis Nolte and Auditor H. H. Hodgdon, who have been appointed to take charge of the newly created Efficiency Bureau of the St. Louis Police Department, visited this city recently, and were shown around the different bureaus of the Police Department by Superintendent Taylor. When leaving for New York they declared that the Philadelphia Police Department was the best equipped, best systematized and most efficient of any city which they had visited. In the Detective Bureau the St. Louis officials were more than surprised at the telephone system so perfectly arranged between the bureau and the pawnbrokers by direct wire. They were treated to a sample of how this works. While the officials were present a man reported that a coat had been stolen from an automobile on Broad street, and in less than 20 minutes it had been located in a pawnshop at Twentieth and Buttonwood streets. Both Lieutenants Nolte and Auditor Hodgdon congratulated Superintendent Taylor on the perfection of the system organized by him and said that in the reorganization of the St. Louis Police Department they would incorporate many of his ideas.

**Burning of Leaves on Streets Prohibited**

Louisville, Ky.—The Board of Public Safety has published a rule for the guidance of policemen, bidding them put a stop to the burning of leaves, trash and other waste matter on the streets. It is considered likely that this move will reduce a fire hazard that is always present at this season. There are other ways of disposal of the various sorts which carry no hazard, and it is now up to the police to see that they are put into effect in preference to the primitive method of starting a bonfire. In many cities the work of disposal, instead of being left to property owners, is done by the street cleaning department.

**To Teach Firemen to Prevent Smoke**

Salt Lake City, Utah.—In line with the campaign of education that has been inaugurated by the vigilance committee of the Commercial Club to eliminate the smoke nuisance, E. A. Folland, Superintendent of School Buildings of the city, has started a school of instruction for school firemen to teach them how to fire the boilers in the school buildings with as little smoke as possible. The firemen will hold regular meetings once a month, at which special lectures and instructions on proper firing of low-pressure boilers will be delivered by competent instructors, and in the meantime actual demonstrations and instructions will be given by an expert.

**Reasons Stated for Retaining Fire Whistle**

Springfield, Mass.—That the proposed chimes on the municipal tower will be unsuitable for giving a fire alarm and that the fire whistle is necessary under the present make-up of the Fire Department has been decided by the Fire Commission. Since the chimes are expected to ring every 15 minutes it is feared that the bells might make confusion, and the whistle, while by no means as musical, indicates exactly to what point in the city it is desired to have the department report. The Fire Commission has prepared its report to the City Council and it will be submitted at the next meeting. With the report of the engineers to the Fire Commission in favor of keeping the whistle are certain recommendations of the commission itself with relation to the objectionable noise. These in the main are that if the fire alarm whistle is abolished more men will have to be employed to take the places of the firemen that are away from the station at meal times and on other occasions. It is maintained by the engineers that in case of another alarm coming in during a fire there would be no way in which it could be communicated to the Chiefs and firemen. Also when the Chiefs are driving about the streets away from the fire stations during the day they would not know that an alarm had been rung in. One point especially made is that the abolishment of the whistle would endanger the lives of the Chiefs while they are on the way to a fire and at the best would interfere with their getting there. When the whistle sounds it notifies the traffic officers and they at once go to work clearing Main street of vehicles. So it is possible for the Chiefs in their automobiles to go at a high rate of speed through the street.

**Firemen with Auto Save Town**

Talleyville, Del.—All of Talleyville, a village four miles north of Wilmington, was threatened, when a fire destroyed James Crocker's home. The fire had communicated to adjoining properties and was spreading fast when the Water Witch Fire Company was summoned from Wilmington, and their automobile apparatus made a record run to the scene.

**Nashville Observes Fire Prevention Day**

Nashville, Tenn.—With the assistance of the Nashville fire and police departments, "fire prevention day" was observed in this city by the cleaning up in all parts of the city of combustible trash and refuse. One fireman out of each company was sent to all the houses in his neighborhood to make an inspection and warn the householder or store proprietor in case there was danger of a fire from trash on the premises. The police also did much work looking toward the cleaning up of the waste, and saw to it that in the streets, alleys, lawns and houses all combustibles were cleared out.

**Signs on Windows to Aid Firemen**

Dallas, Tex.—A red circle to denote those windows through which firemen may enter to check conflagrations will be required of all business houses that store their goods upstairs, is the statement of Fire Marshal Homer Fisher. Mr. Fisher said that he will require for 25-foot buildings an aisle east to west and one north to south and that for buildings 50 feet or over he will require two such aisles in each direction, or four in all. The windows to which the aisles lead are to be designated by a red circle on the outside in order to show where the firemen may gain ingress in order to fight flames. These aisles are to be put in at once. The Fire Marshal declares that Sears-Roebuck, of Dallas, has adopted his suggestion and that it will be adopted by all the houses of this firm throughout the United States.

**City Adopts Rules for Police Officers**

Dallas, Tex.—Police Commissioner Fred W. Bartlett has presented to the City Commissioners a set of rules and regulations for governing the Police Department of the city. He was instructed to have these regulations printed in book form for distribution among the policemen of the city. Included in the booklet will be other information needed by patrolmen and other police officers.

**Boston Makes New Fire Rules**

Boston, Mass.—Radical changes in the Fire Department, the laws and ordinances regulating the erection of buildings, and the enforcement of other laws and ordinances relating to the protection of life and property were recommended in a majority report submitted to Mayor Fitzgerald by the Commission on Fire Prevention, appointed to examine into the needs of the department and to study the general subject of fire hazard in Boston. The commission was composed of Francis M. Carroll, chairman; C. H. Blackall, nominated by the Boston Chamber of Commerce; John W. Decrow, nominated by the United Improvement Association, and William H. O'Brien, representing the Boston Central Labor Union. Mr. O'Brien, who submits the minority report, agrees to all of the recommendations and statements in the majority save those relative to the extension of the building limits to include the whole city.

Some of the majority recommendations follow:

"The institution of a campaign of education on the location of the nearest alarm box and the method of operating same.

"The substantial increase in the number of alarm boxes and the relocation of many of those now in service.

"The relocation of the fire alarm operating office in a building of absolute fireproof construction.

"The replacement of present overhead bare wires with either overhead or underground cables as the case may require.

"The gradual replacement of the present horse-drawn apparatus with motor propelled apparatus.

"The redistribution of the present fire-fighting force and a closer equalization of the force on duty day and night. The employment of a reserve force so that the force on duty may be always kept up to a definite standard.

"The enactment of a law prohibiting the construction of any but fireproof buildings within the congested business district.

"The re-location of alarm boxes from inconspicuous points to street corners is recommended, as is also an appropriation for the installation of 100 new boxes and the equipment of school-houses."



### Fire Chief Gives Advice in Case of Fire

Omaha, Neb.—A booklet entitled "How to Prevent Fires and What to Do in Case of Same," published by the city of Omaha for the fire warden and distributed gratuitously among business men, has created a stir in other cities and calls for copies have been received from Fort Wayne, Aurora, Indianapolis and Cincinnati. A few of the books were taken to the convention of Fire Chiefs in Milwaukee, and since then Commissioner Wappich and Chief Salter have received scores of requests for the pamphlet. In the pamphlet Chief Salter makes, among others, the following suggestions: In case of fire never hesitate to call out the department, but do not call it out unnecessarily. Give the nearest cross streets when sending in an alarm and be on hand to direct the firemen to the fire if it is inside and not visible from without. In sending in an alarm speak distinctly and know that the correct address has been received by the operator. Observe these rules if in a hotel or building when fire breaks out: Crawl on the floor. The clearest air is the lowest in the room. Cover head with a wrap, wet if possible. Don't get excited. Familiarize yourself with all entrances and exits. At the cry of "Fire" keep cool. Open windows from the top and keep the door shut. Don't jump unless it is the last chance. Never go to the roof unless forced to, and if through flames stuff a wet towel in your mouth and breathe through it. The Chief follows these rules with advice to hotel proprietors and lodging-house keepers in preventing fires and extinguishing them before they have gained control of the building.

### Plan Fire Signal Lights

Evansville, Ind.—Seven fire houses are to be equipped with red lights to warn the street car crews in time of fire. Mayor Hellman suggested that the city buy the boxes and switches, as the car company has agreed to furnish the lights, currents and wires. The company has also agreed to do all the wiring and the switches will be arranged so that the light will work automatically and the red light will show as soon as the fire gong rings. As soon as the red light shows in front of the hose house the street car is stopped long enough to see if the fire company intends to go out on that alarm.

### Erie Fire Board Buys Engine

Erie, Pa.—At a meeting of the Fire Board held recently the Commissioners authorized the purchase of a second size American La France fire engine to be used at No. 5 engine house, Ninth and East avenue. The cost of the engine is \$5,800 complete. It will be fully equipped with extra parts which can be utilized on other engines of the same make now in use in the department. The new engine will be fitted with automatic oilers, a feature not to be found on other engines in use in the city. As soon as the engine begins running the oil cups are opened and oil is played on the shafts and bearings. The machine will come equipped with an extra rear and front wheel and a two and a three horse hitch suitable for good and bad weather conditions. The new apparatus is expected to arrive in about 90 days.

### Shelter Provided for Police Horses

Fort Worth, Tex.—Horses used by the mounted police now have shelter during bad weather. Arrangements have been made so that the North Side station, the two South Side stations and the central police station will have shelter for the animals during bad weather when they are not being ridden. For the past few years when the mounted police were waiting for orders or for calls there has been no place where their horses could be protected in bad weather and the animals have stood outside the stations, always blanketed, but also always uncomfortable. The city has procured shelter for the horses used by the mounted police at the central station, and both the South Side stations and the North Side jail also have stalls for the horses now, much to the pleasure of their owners. The mounted police own their horses and the animals are in most cases great pets. Horses will have to be blanketed in bad weather when they must stand for any length of time. This is the order of the City Humane Association, and it will be enforced.

## GOVERNMENT AND FINANCE

### State and City Exchange Checks

Boston, Mass.—Boston's contribution to the State Treasury of the commonwealth for this year is \$5,401,946.57, which is \$2,985,008.97 more than the State is obliged to return to the city for the street railway tax, corporation tax and other purposes provided by law. The State's share to the city is \$2,416,937.54.

### Chelsea Will Have Mayor and Aldermen Again.

Chelsea, Mass.—By a majority of 230, citizens voted to return to its power system of government by mayor and aldermen. After the fire which destroyed a large portion of the city two years ago, the governor of Massachusetts appointed a commission of three members to administer the affairs of the city, until such time as it was believed the government could be conducted in the regular way. The vote showed the opinion of the majority view was that emergency measures were no longer necessary.

### City Has Large Account with State

New Bedford, Mass.—State Treasurer Elmer A. Stevens forwarded to the City Treasurer of New Bedford recently a check for \$133,129.17, this representing the amount due the city in the annual balancing of its account with the commonwealth. Below are shown the various items going to make up the debit and the credit sides of the city's account with the commonwealth:

Due the Commonwealth.	
State tax.....	\$122,540.00
National bank tax.....	39,235.12
Abolition of grade crossings loan, fund.....	18,071.02
Interest on same.....	1,802.53
<b>Total due commonwealth.....</b>	<b>\$181,648.67</b>
Due the City.	
Corporation tax, public service.....	\$58,488.62
Corporation tax, business.....	214,668.37
National bank tax.....	3,716.48
Military aid.....	3,310.50
State aid.....	13,162.00
Support of sick paupers.....	189.63
Temporary aid.....	846.02
Transportation of paupers, for State Board of Charity..	10.44
Burial of paupers.....	606.00
Contagious diseases.....	646.24
Burial of indigent soldiers and sailors.....	740.00
Street railway tax.....	18,272.04
Tuition of children.....	121.50
<b>Total due the city.....</b>	<b>\$314,777.84</b>
<b>Balance due the city.....</b>	<b>\$133,129.17</b>

### Financial Report for the Year

Wilmington, Del.—The Street and Sewer Directors have issued the twenty-fourth annual statement of the department for the fiscal year ending June 30. The report shows that there are 167 miles of improved and unimproved streets in the city, and that during the year 5,214.65 linear feet of curbing were placed at a cost of \$3,448.53 to abutting property owners. During the same period 489.86 linear feet of sidewalk paving were laid at a cost of \$667.36 to abutting property holders. There were in July, 1911, 371 arc lamps in the city, the cost of each being \$64.92 for the year. Two arc lights were added and one taken away. In July, 1911, there were burning 466 electric incandescent lights at a cost of \$15 a year for 40 candlepower. The cost of 666 incandescent gas lamps was \$20.80 per lamp. The total cost of lighting was as follows: Arc, \$24,088.53; electric incandescent, \$6,600.96; incandescent gas, \$13,831.30; total, \$44,520.79. Attached to the report there are several schedules, one showing the detailed vouchers issued, the total of which was \$381,775.50, and also exhibits showing the materials used in the paving of streets, the amount, cost, etc. The general ledger shows the balance in bank July 1, 1911, to be \$213,104.05 special fund and \$3,988.73 current fund. The report shows that on January 1, 1911, there were the following number of miles of the various kinds of paving: Rubble stone, 10.335; granite blocks, 11.869; vitrified brick, 13.257; ordinary macadam, 18.563; Bermudez street asphalt, 1.013; Amesite macadam, 0.142; bituminous macadam, 2.773; Warren's bitulithic, 6.992; Portland cement concrete, 2.718, making a grand total of 67.662. During 1910 the following number of square yards of the various kinds of paving were laid: Granite block, 833.24; Warren's bitulithic, 20,002.08; bituminous macadam pavement, 26,929.32; Portland cement concrete, 1,358.57.



### City Makes First Payment to Industrial Insurance Fund

Spokane, Wash.—The first payment of the city of Spokane to the State Industrial Insurance Fund will be \$7,500, as calculated by the State Commission. This will cover any accidents that may be sustained by city workmen in the months of October, November and December. The assessment is based on the October construction payroll of the city. This totaled \$48,305.15, divided as follows: Street work (principally Wall street paving), \$22,575.25; Monroe street bridge, \$13,783.30; sewer construction, \$858.70; water department work, \$11,087.90.

### City Saves Interest

Tacoma, Wash.—Members of the Municipal Commission voted unanimously to indorse the plan of City Controller J. F. Meads to withhold the issuance of \$900,000 worth of bonds for a period of six months in order to save the city a large sum in interest. There are bonds of \$300,000 and \$643,000 to be issued respectively for the light and water and bridge funds. In order to stave off the issue for six months a process of borrowing from other funds to pay for bills charged to the light and water and bridge accounts will be inaugurated.

### Mayor Plans Board of Advisers

Ocean City, N. J.—Mayor Headley is planning to have a cabinet or board of advisers. The members will represent the financial institutions, the churches, Board of Trade, the Beachfront Association, yacht and motor boat clubs and similar organizations. It is the purpose to have the members of the cabinet confer with the Mayor on subjects of interest to the city.

### Rejects Commission Plan

Council Bluffs, Ia.—The commission plan of city government was rejected by Council Bluffs by a majority of 422 votes. About half of the voters in the city registered. The campaign has been brief and no organized force worked either for or against the measure, although it has been supported by the papers of the city. The districts in the business portions supported the measure, while outlying districts registered strong opposition.

## STREET CLEANING AND REFUSE DISPOSAL

### Detroit to Enforce Garbage Ordinance

Detroit, Mich.—Violators of the garbage ordinance in residence districts inhabited by Detroit's well-to-do citizens will face complaints by the Police Department under the plan of action decided on by the sanitation committee of Detroit Board of Commerce and recommended in a communication presented to the Common Council committee. The communication was referred to the Council committees on ways and means and ordinances. The committee takes the ground that it would be unwise to attempt to draft a new garbage ordinance until it shall have been decided how the city will collect and dispose of its garbage. The committee believes the present city ordinance can be enforced. It is understood the committee has gained the consent of the Police Department, Recorder's Court, Health Department and Department of Public Works to join in a co-operative effort to see that it is enforced. In working out this theory the Police Department will be asked to make complaints against persons living in the better, rather than those in the poorer sections of the city. Meantime, it is planned to conduct an educational campaign in the effort to improve the city's sanitary condition.

### Filling Insanitary Ponds with Ashes

Knoxville, Tenn.—The pond nuisance is being abated in North Knoxville. This nuisance has caused much complaint from the citizens and the property owners in that section. The City Beautiful League has been working upon this proposition for some time, and is now securing results. The extension of the sanitary sewer has made it possible to drain the pond on the Gray estate property, and Chairman John W. Flenniken granted the heirs to the Gray estate the right to place in a trap and connect with this sewer, and in this manner the majority of the water in that pond will be drained. This will be followed by dumping dirt into the north end pond, so that all of the water will be driven to the outlet and the pond thoroughly drained.

### Prizes Offered for Collecting Old Cans

Knoxville, Tenn.—The Knoxville *Sentinel* recently offered a prize for the boy who collected the greatest number of tin cans, incident to the city's "clean-up" campaign, which lasted for a week. The prize, consisting of a goat, harness and wagon, was won by a six-year-old boy, Lawrence Anderson, who gathered 5,741 tin cans from yards, streets and alleys in the vicinity of his home. The tin can



Courtesy Knoxville *Sentinel*.

TIN CANS COLLECTED BY KNOXVILLE BOYS

crusade was found to be such a valuable aid to the work of the City Beautiful League that the president of the league volunteered three cash prizes to the boys bringing in the second, third and fourth largest number of cans. The total number of cans delivered at the *Sentinel* Building was more than 13,000. The accompanying picture shows the winner of the goat, cart and wagon standing upon the mound of 13,000 cans which were collected.

### More Money Spent in Street Cleaning Than Ever

Lynn, Mass.—More work than ever before in the history of the city is being done this year by the Department of Streets and Highways in street and sidewalk cleaning. With an appropriation of \$16,500 this year, which is \$500 more than was credited to the same account by annual budget appropriation in 1910, the expenditures up to October 30 was \$14,071.32, as compared with \$13,074.88 during the corresponding period a year ago, and at the last regular meeting \$1,000 more was transferred to the crosswalk cleaning account from Highway Department, the expenditures in which have been nearly \$6,000 less than last year.

## RAPID TRANSIT

### City Plan to Govern Location of New Lines

Salt Lake City, Utah.—As a result of strenuous protests on the part of property owners against the proposed street car line up North State street to the Capitol grounds and the recommendation of John Olmstead, landscape expert, that the line be built up North Main, thence to the Capitol grounds, the Utah Light and Railway Company has filed a petition to the City Council with the City Recorder withdrawing its application for a franchise on State street and asking for one on North Main and other streets. The application of the company calls for a franchise to build a single or a double line from its present line at North Main and First North streets, north on Main to Second North, thence east on Second North to West Capitol avenue, thence northwesterly to Fourth North. This route was recommended by Mr. Olmstead in his report to the Capitol Commission, as it would bring the car line to the west entrance to the Capitol and would conform to his plan of carrying the car line through a tunnel from West Capitol avenue to a central station, beneath the Capitol Building, where passengers could alight from the car and take an elevator to any portion of the building. A committee of the commission was named to take the matter up with the officials of the street car company and the application for the franchise has followed. There was a strenuous protest against building the line on State street owing to its narrowness.

### Car Barn and Power House for City Railroad

San Francisco, Cal.—Public Works Commissioner Laumeister states that ground for the power house for the car barn of the Geary street municipal railway will soon be broken. The site purchased for the car barn is at the corner of Geary street and Presidio avenue. After taking from the City Engineer's department such plans and specifications as it had for the various features of the city street railway system, Commissioner Laumeister put some engineers to work in the office of the Superintendent of Construction, Patrick Broderick, and the completion of the road will be expedited by the change, he says. The change of place for work on the plans and specifications was considered necessary by Laumeister on account of the delay in the City Engineer's office. The Mission Promotion Association has sent to the Supervisors a recommendation that the cars for the city railroad be built in California. The bids will be both for all-steel cars, which can be built only in the East, and for semi-steel cars, which can be manufactured, at least in part, in this State.

### Indorses Municipal Loop

St. Louis, Mo.—The board of directors of the Real Estate Exchange has adopted a resolution asking the Public Service Commission to draw a bill empowering the city to build and maintain a downtown street car loop in connection with the roadway of the free bridge. The route suggested is over part of the streets taken by the Southern Traction Company's franchise, and the proposed ordinance is conditioned on the repeal of the Southern Traction franchise in its entirety, which is also asked in the resolution. The resolution says that the loop from the end of the bridge should extend north over Seventh or Eighth streets to Lucas avenue, thence to Twelfth street, to Lafayette avenue, back to Seventh street and north to the bridge entrance. This involves opening Twelfth street through from Chouteau to Park avenues. A provision that all car lines operating over the bridge shall carry a passenger from any point on their line in East St. Louis to any point on the loop in St. Louis for one 5-cent fare is asked.

### Concrete Posts Supplant Wood

Syracuse, N. Y.—Concrete posts for trolley wire suspension purposes promise to entirely supplant wooden posts in Syracuse in the not distant future. Already the Syracuse Rapid Transit Company has in the neighborhood of 175 of these poles in service in various parts of the city. Where wooden poles require replacing a concrete post is being installed on the various lines. The scarcity of timber, which makes it difficult to obtain straight and slightly wooden poles, and the advancing cost, which threatens to make their use prohibitive in a few years, has led electric railroad and other public service corporations to cast about for a substitute. During the last few years iron posts have been extensively used. One of the first corporations in the country to experiment with concrete posts was the Syracuse Rapid Transit. Its claim in this regard is only antedated by the Fort Wayne & Wabash Valley Railroad. Over two years ago the engineering department of the Syracuse Rapid Transit system began experiments to test out the practicability and the lasting qualities of concrete as a substitute for wood in guy wire posts. A year ago last June a sample of a concrete pole made in Syracuse was on exhibition during the convention of the Street Railroad Association of New York State at Cooperstown, where it attracted widespread attention. A pair of concrete trolley wire posts erected a year ago by the company on one of its lines as an experiment stood the cold and frost of last winter without any signs of disintegration. During the summer more concrete posts were used in construction work about the city and in replacing decrepit wooden poles. In the Willow street extension work, recently completed, one-half of the posts used in the three blocks traversed were of concrete construction. As wooden poles wear out it is expected the company will substitute concrete posts until the entire system outside the business section of the city will be equipped with them, provided present prospects of durability are sustained. The concrete posts are made by the Rapid Transit Company at a plant located near Rockwell Springs. Up to date about 300 of the artificial stone posts have been made. In point of cost the concrete posts are more expensive than wooden poles, but they last much longer.

## MISCELLANEOUS

### Municipal Purchase of Provisions Advocated

Indianapolis, Ind.—In the municipal purchasing agent Mayor Stanley K. Shank, of Indianapolis, believes he has found the means of breaking the power of the cold-storage owners and reducing the cost of living to city dwellers. Mayor Shank came into national prominence by personally selling potatoes and apples in the markets of Indianapolis at half, or less than half, of what the regular dealers were selling them, and he now writes Arthur E. Overbury, New York, that out of his experience in fighting the cold-storage people in his city he has decided to appoint a capable man to go into the city markets to see that a shortage of all commodities is prevented. In a recent letter to Mr. Overbury, who has been interesting himself in the high cost of living in New York, Mayor Shank also says:

The law of supply and demand, it seems, no longer controls the price of commodities. This is now largely the prerogative of the commission and cold-storage men. This Fall people of Indianapolis paid as high as \$1 a bushel for apples. At the same time fruit was rotting on the ground in orchards not more than 20 miles from the city. This puzzled me at first, but an investigation soon revealed the reason. Growers told me they were unable to get enough for the fruit to pay the cost of gathering and shipping. Commission men said the market was glutted. It was. Cold-storage houses contained millions of bushels. Only a limited supply was permitted to reach the consumer, hence the high price.

I became interested in potatoes when I noticed such a wide difference in prices. In Michigan they could be bought at about 70 cents a bushel. At the same time Indianapolis people were paying about \$2 a bushel. This convinced me somebody was getting an unreasonable profit. I sent a man into the growers' territory with instructions to buy if prices were right. Two days later he wired that he had purchased one car at 69 cents free on board Indianapolis. These potatoes I sold on the city market at 75 cents a bushel. Where delivery was required I charged 85 cents. This just about paid the expenses of the venture. The first car was soon followed by another, and up to the present I have disposed of about ten carloads. Of course, I do not expect to keep this up indefinitely. The coming of the potatoes had the effect I desired. It convinced the people there was a hold-up somewhere.

I believe a municipal purchasing agent will go a long way toward solving this problem. Place a man in the city markets to see that a shortage of any commodity is prevented, and it is my belief that prices will remain pretty close to their normal level.

Mr. Overbury believes many other cities are watching the experiments carried on in Indianapolis by Mayor Shank, and that eventually the law of supply and demand will once more have direct bearing in the regulation of prices.

### South Amboy Plans War on Noisy Autos

South Amboy, N. J.—If an ordinance now pending before the City Council passes, automobilists traveling through the city will pay heavily for using the muffler cutout. The measure presented this week fixes a fine of \$25 or imprisonment for 30 days as the penalty for the use of "unmuffled exhausts."

### Chicago Schools Serve Penny Lunches

Chicago, Ill.—Penny lunches, which the School Board as an experiment began to serve a few months ago, have developed into a part of the curriculum in several of the public schools here. They have been found to be of great value in making the children more plump and the brains more active. Before the lunches were instituted many of the children seemed backward in their studies. It was found that nearly all of these came from families in straitened circumstances. Then the School Board began the lunches to see if it was food that was needed. In a short time it was found that there was a remarkable improvement. At a school on the North Side Italian district 202 children were fed. They disposed of 17 loaves of bread, generously spread with butter and molasses, and six gallons of milk. In addition to being fed, the children are taught table etiquette.

### Columbia Would Abolish Grade Crossings

Columbia, S. C.—Calling attention to the fact that there is doubt existing as to whether municipal authorities or the Commission have jurisdiction, the Railroad Commission will recommend to the General Assembly that the power to regulate and control all grade crossings be vested with the Commission. The Commission in the section of the annual report that deals with the grade crossing points out that the importance of grade crossing of street cars with railroads has been forcibly impressed upon the minds of the citizens of Columbia and the railroad authorities by the accident at the Taylor street crossing several weeks ago when a dozen persons narrowly escaped death. The Commission, according to the members, will work to eliminate all dangerous crossings in the State.



### Boston Organizes Municipal Athletic Association

Boston, Mass.—Preliminary steps for organizing the Municipal Athletic Association, started in the spring with Mayor Fitzgerald as chairman, were followed up at a meeting in the City Club, when the bylaws were adopted. It is expected that the organization will be far enough advanced during the winter to conduct indoor meets in various parts of the city. The object of the association as stated in the bylaws is "to conduct athletic games, swimming and rowing, gymnastic exercises and such other activities as may be thought wise among boys and girls and young men and women. In this connection the association is to co-operate with the city departments, public school authorities and other organizations. The officers will include the Mayor as honorary president, the Chairman of the City Council as honorary vice-president, the Secretary of the Bath Department as honorary secretary, and the City Treasurer as honorary treasurer. The other officers will consist of a president, first, second and third vice-presidents, treasurer and secretary. The association will be under the supervision of an advisory board of not less than 50 and not more than 250 members.

### Commissioners Plan for Greater City

Trenton, N. J.—In order to secure the best results in planning for the improvement and growth of Trenton the City Commissioners have passed the following resolution:

"Whereas, There exists no definite plan of the city of Trenton providing for extension and growth in a logical and definite manner; and

"Whereas, It is deemed desirable to make provisions for the future growth of the city; therefore be it

Resolved, That the City Clerk be and hereby is directed to correspond with the city clerks of such other cities as have had prepared plans for their future development, to obtain copies of such plans as far as possible, to ascertain what is the usual cost for the preparation of such plans, and to report such information to the board as promptly as possible.

### Public Fountain in Alexandria

Alexandria, Va.—A design for the public drinking fountain to be built at the intersection of Cameron and Royal streets by Mount Vernon Chapter, Daughters of the American Revolution, has been adopted and work on the memorial will be begun early next spring, if the state legislature grants permission to use the center of the crossing for that purpose.

### City Organizes School Improvement League

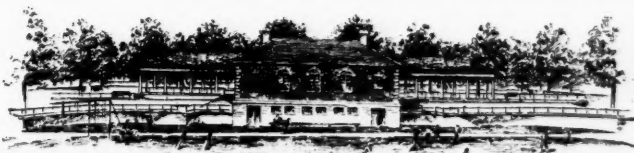
Lawrenceburg, Ind.—A School Improvement League has been organized in this city with over 150 professional and business men. The object of the organization is to assist in promoting the intellectual, social and economic interests of the citizens and a closer union of the men of this city for an extensive study of social and civic problems of general interest as well as those of immediate concern. These officers have been elected: President, the Rev. Charles D. Wilson, pastor of the Hamline Methodist Church; Secretary, Jesse W. Riddle, Superintendent of the Public Schools.

### Public Morals Board Named by Commission

Tacoma, Wash.—Appointments by Mayor Seymour and Commissioner Pettit of members of the newly formed Social Service Board were confirmed by the Municipal Commission at its last legislative session. Besides the Mayor and Commissioner of Public Safety, who are ex officio members, the board will be composed of Mrs. J. Q. Mason, Miss A. B. Hillman, Mrs. Ida W. Healey, Mrs. J. A. Hays, Mrs. Leonard Crassweller, Mrs. John Gilchrist, W. W. Parker, Rev. Charles W. Blanpied, Rev. C. J. Jenkins and William Hannon. The board was created by an ordinance passed by the Commission several months ago, but nothing was done pending the appointment of its members. The organization will pay particular attention to juvenile delinquents and will work in conjunction with the Public Morals officers, the Police Department and other organizations to aid in maintaining a good standard of morals in the city. Its members will inspect amusement places of all kinds and make recommendations to the city government regarding them. No compensation will be given the board members, whose particular aim it will be to care for the delinquent small boy and girl.

### Playground Building with Auditorium

Providence, R. I.—Tentative plans for a building in the center of the Garibaldi Playground have been drawn by Thomas W. Sears and Sibley C. Smith, landscape architects, at the suggestion of the Providence Playground Association, and have been submitted to the Park Commission-



PROPOSED BUILDING FOR GARIBALDI PLAYGROUNDS

ers. The latter have taken control of the playground since its purchase by the city. Not agreeing with the suggestion advanced by the City Engineer's department, that the entire ground be leveled for the purpose of removing a difference of 24 feet in the grade on opposite sides, Messrs. Sears and Smith arranged a plan whereby the ground is worked into three levels, with the proposed building on the middle one. The structure is two stories in the center, with covered piazzas on each end. The general idea is to have the second floor used as an auditorium, where social gatherings can be held in the winter, with the lower floor a locker room. Though nothing definite has been settled upon the plans suggest that concrete be used for the first story to have it correspond with the retaining walls on the ground and to have the second story of brick.

### Special Department to Care for School Trees

Indianapolis, Ind.—A special Forestry Department to devote its attention exclusively to looking after trees on public school property, is to be organized at once by the Board of Park Commissioners. While the board will have full control of the new department, all bills are to be paid by the Indianapolis Board of School Commissioners. Three or four men will be employed in the department and will be equipped with spraying machines and other necessary equipment. The Park Board and School Board have agreed to the arrangement.

### Ordinance Committee Wish Uniform Auto Horn

Norfolk, Va.—Preliminary to making a report to the Councils on an ordinance which will require warning signals on automobiles to be uniform and meet also certain other specifications the Ordinance Committee at their last meeting decided to confer with the Tidewater Automobile Association as to the sort of signal that probably would afford the most general satisfaction. Another meeting of the committee, to which the automobilists will be invited, will be held prior to the December sessions of the Council. It is proposed also to provide in the ordinance specific regulation of the signals used on bicycles and motor-cycles.

### Submits Street Numbering Plan

Detroit, Mich.—In response to a resolution adopted by the Common Council, August 22 last, asking him to devise and submit a plan for renumbering the houses of the city, City Engineer McCormick has sent to the Council a scheme for a complete change in the system. He accompanied it with the comment that personally he does not believe that any change is necessary, but that if one is to be adopted this is the best one he can devise, after having studied the numbering systems in a dozen different cities. The plan calls for the beginning of all numbering on the east and west streets at Woodward avenue, and of all north and south streets at a line on the south so located that the numbers will correspond all the way across the city. That is, he would have the numbers so arranged that if 1000 Woodward avenue, for instance, should fall at the corner of Forest avenue, 1000 on any other north and south street would also fall at Forest avenue, the same system applying to the numbers on the east and west streets. He would allow one number to every 20 feet of land. He estimates that it would cost \$7,000 to change the numbers in the books in the city engineer's office alone. The matter was referred to the Committee on Streets.

## LEGAL NEWS

### A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

#### Wires Along Highway—Negligence of City

Gaetjens vs. City of New York.—Where a city permitted a private electric lighting company to string its wires upon poles erected along a highway by the city for police telegraph, and, though the light wires carried dangerous currents, the city left its telegraph wires, which had been abandoned and were unconnected with anything upon the poles, and they came in contact with an uninsulated place on the light wires, and, upon breaking, severely burned plaintiff, the question of whether the city was negligent was for the jury.—New York Supreme Court, 131 N. Y. S., 169.

#### Special Assessments

Corliss vs. Village of Richford.—A law providing for public improvements with special assessments upon abutting landholders is not unconstitutional in failing to give such landholders an opportunity to be heard upon the question of the necessity of the improvements, as no property is taken by the construction of the improvement, but only a foundation laid for the exercise of a particular right of taxation. Special assessments upon abutting landowners for public improvements are based upon special benefits, which are those that the landowner receives from the improvements in excess of the general public. An act providing for public improvements, and authorizing special assessments, must fix the legal standard of the assessments; and so an act providing for an assessment for each landowner's "just share of the expense" is invalid, as the words "just share" do not with reasonable certainty limit the assessment to the special benefits conferred.—Supreme Court of Vermont, 81 A. R., 234.

#### Sewer Contract—Condition in Bid

Commissioners of Sewerage of Louisville vs. National Surety Co.—A contractor made a bid for sewer construction, offering to supply steel for concrete reinforcement known as "Calumet steel bars" at a specified price per pound. The contractor executed a bond to enter into a contract if his bid was accepted. The bid was accepted, but the sewerage commissioners, not being familiar with Calumet steel bars, thereafter refused to accept such bars or to permit them to be used. Held that the contractor's bid was based on the use of the bars named, and that, on the commissioners' refusal to permit their use, there was no acceptance of the bid, so as to entitle the commissioners to sue on the contractor's bond for his refusal to enter into the contract.—Court of Appeals of Kentucky, 140 S. W. R., 62.

#### Dumping Ground—Nuisance

City of Haskell vs. Webb.—A city, not shown to be operating under a special charter, is presumed to be subject to Sayles' Ann. Civ. St. 1897, relating to cities and towns; the burden being on it, in a suit against it, to show exemption from the operation of such general laws. Sayles' Ann. Civ. St. 1897, authorizing a city to make all necessary and expedient health regulations, authorizes a dumping ground outside the city limits. A city authorized to maintain a dumping ground is liable for damages to adjoining owners caused by its maintenance as a nuisance.—Court of Civil Appeals of Texas, 140 S. W. R., 127.

#### Infringement of Patent—Preliminary Injunction

Byerley et al. vs. Standard Asphalt & Rubber Co.—A court will not ordinarily on a motion for a preliminary injunction to restrain infringement of a patent determine the scope and validity of a subsequent patent under which defendant is operating, the presumption being, until overcome by proof, that it substantially differs from the earlier patent, and that defendant is acting within his rights. A preliminary injunction to restrain infringement of a patent denied where defendant had for 15 years been engaged in manufacturing the alleged infringing product under later product and process patents, and had an extensive business with a large investment and outstanding contracts, and where the question of infringement was doubtful on the showing made.—United States Circuit Court, 189 F. R., 750.

#### Public Improvements—Bonds—Necessary Expenses

Town of Murphy vs. C. A. Webb & Co.—In the absence of any legislative restriction on taxation and the contracting of debts, there is no objection to the issuance of bonds for the necessary expenses of a town, without a popular vote authorizing the same; and bonds issued by a town, for the purpose of extending and enlarging its water and sewerage system and making street improvements, fall within the class of "necessary expenses."—Supreme Court of North Carolina, 72 S. E. R., 460.

#### Municipal Light Plant—Negligence—Liability

Adepe vs. City of Thomasville.—In operating an electric light plant, furnishing electric lights for pay, a city is engaged in a private, nongovernmental business, and is liable to one injured through the negligence of its employee engaged in repairing wires.—Court of Appeals of Georgia, 72 S. E. R., 478.

#### Contract with Water Company—Debt Limit

Allison et al. vs. City of Chester et al.—A contract of a municipal corporation, with a water works company, for a supply of water for public use, for a stipulated number of years, at a stipulated price per year, payable in quarter annual payments, is not void, by section of the Constitution limiting municipal indebtedness, because the aggregate of such payments, for the full term of the contract, with existing indebtedness, exceeds the amount for which such municipality is by said section allowed to become indebted. The validity of such contract is tested by the aggregate of the quarterly payments for the first year.—Supreme Court of Appeals of West Virginia, 72 S. E. R., 472.

#### Governmental and Corporate Duty

City of Pass Christian vs. Fernandez.—A driver of a city cart, engaged in hauling trash and dirt for the city, is not engaged in a "public or governmental duty," which is a duty given by the State to a city as a part of the State's sovereignty, to be exercised by the city for the benefit of the public living within and without the corporate limits, but is engaged in a "private or corporate duty," and for his negligence the city is liable.—Supreme Court of Mississippi, 56 S. E. R., 329.

#### Streets—Maintenance—Duty

Johnson vs. City of Raleigh.—The governing authorities of a city must keep its streets, sidewalks, drains and culverts in reasonably safe condition, so far as it can be done by using proper and reasonable care and continuing supervision. As affecting a city's liability for injury to a pedestrian, who stepped into a hole in a street, absence of light at the place was not negligence per se, but only a relevant fact on the issues whether the street was kept reasonably safe and whether the authorities properly performed their duty.—Supreme Court of North Carolina, 72 S. E. R., 368.

#### Bridge Over Irrigation Ditch—Duty to Construct

South Yuba Water Co. vs. City of Auburn.—Civic code requiring every water or canal corporation to construct and keep in good repair all bridges across their canal that the board of supervisors of the county where such canal is situated may require, etc., does not require such companies to construct culverts to carry streets established subsequent to the construction of the canal over the same; the duty to construct such culverts being on the city.—District Court of Appeal, California, 118 P. R., 101.

#### Grading Street—Negligence

Giacomi vs. City of Astoria.—Where a city filled a street without providing for a proper foundation, which resulted in the loose ground on which the fill was deposited sliding onto plaintiff's property, to his damage, it was no answer that the city had employed a competent engineer to draw plans and specifications; such employment not being a fulfillment of the city's duty to avoid injury to another, when, notwithstanding the engineer's competency, the work as constructed caused the injury. A municipal corporation is not liable for mere consequential injuries resulting from ordinarily careful administration of a reasonably prudent plan of street improvement; but if the city itself executes any public work it acts ministerially, and is liable for any injury resulting from its negligence or maladministration.—Supreme Court of Oregon, 118 P. R., 180.



## MUNICIPAL APPLIANCES

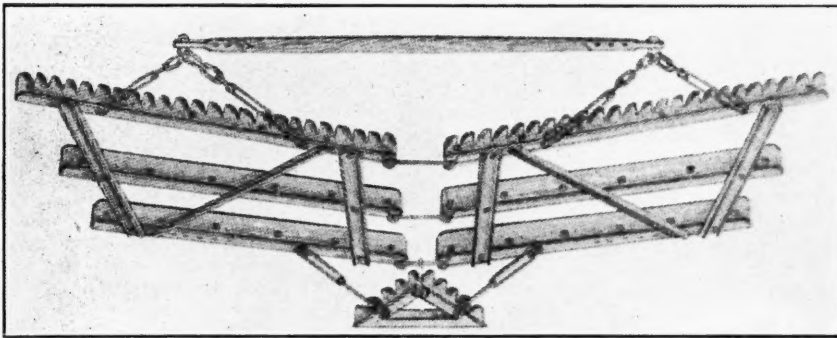
### Heated Drum Mixers

A new class of devices, heated drum batch mixers, have been placed on the market by several manufacturers during the past year. These inventions are useful principally as heaters and mixers of bituminous materials for purposes of street paving. The smaller mixers of this class, however, are also of special value as mixers of concrete in cold weather. They may contribute much toward the solution of this troublesome problem.

Of the larger machines whose capacity is such as to place them in the class of portable asphalt mixing plant are the Blake and the Warren machines. The Blake is manufactured by the El Oso Asphalt Co., Victoria building, St. Louis, Mo., the Warren by Warren

culty is the question as to the quality of work after it is laid. The difficulty of getting frozen stone and sand into the mixer is not insuperable though somewhat costly, depending on the source of supply. With the use of the heated mixer the second difficulty is wholly overcome and the third under some circumstances may be overcome, as where concrete is placed underground, or where there is enough heat in the concrete so that it will dry out before being frozen. Hence the invention of heated concrete mixers is a boon to contractors working late in the fall.

These mixers, of which the Rapid, illustrated herewith, made by the Rapid Mixer Company, 19 Huron street, Grand Rapids, Mich., may be taken as a type, promise to have a wide field



PERFECTO ROAD FLOAT

Bros., Temple Place, Boston, Mass. Both have a capacity of handling two batches of 3000 pounds, about two cubic yards at one time. In the Warren machine the material goes from one compartment in a drum to the other, the heating being accomplished principally in the first and the mixing in the second. In the Blake there are two separate drums, the heating and mixing being accomplished in either drum.

Both of these machines are the outgrowth of the bituminous paving industry and were made to fill a want recently developed, although their use is by no means restricted to the particular need which contributed to their invention. Stone mixtures require less heat than sand mixtures, because stone contains a less percentage of moisture than sand. It was found that in hot weather stone mixtures could be handled in an ordinary batch concrete mixer. It became apparent that the addition of an oil-heating device would be of great value in this class of work, even if the capacity of the heater were much less than that of the furnaces placed under the ordinary drums and in bituminous paving construction. As a matter of fact, in carrying out their ideas, the two companies mentioned have developed asphalt plants of considerable capacity, which have the advantage over other asphalt plants that they easily handle old paving material.

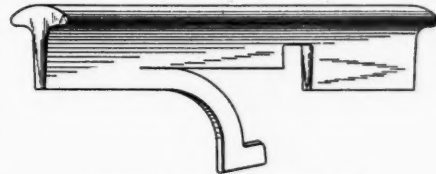
A simpler one cylinder heater and mixer has been developed from ordinary practice in the cement concrete industry. In laying cement concrete in the winter three classes of difficulties are met. The stone and sand when frozen are difficult and expensive to handle before they are placed in the mixer. In the mixer they mix with difficulty, only in part overcome by the use of hot water, salt, etc. The third diffi-

of usefulness in the bituminous paving industry, though of less capacity than an ordinary asphalt plant.

The Rapid mixer is claimed to have a unique gyratory mixing movement which enables it to handle the stickiest road materials. The portability of this machine is also claimed as one of its advantages. It is obvious that a single drum mixer, weighing half as much, can be kept closer to the work than the double mixer. Several other manufacturers of cylindrical batch concrete mixers have added the heating device to their mixers this year.

### Steel Corner Bar for Concrete Curb

The Aberdeen Steel Company, 103 Park avenue, New York, N. Y., have placed on the market a steel corner bar as a protection for concrete curbing to prevent abrasion by the shear-

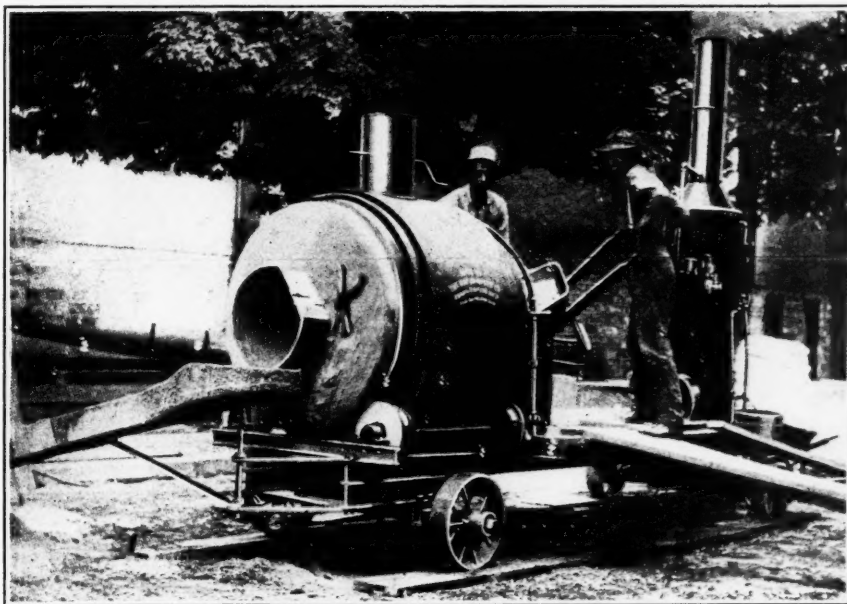


ABERDEEN CURB CORNER BAR

ing effect of wagon wheels and other agencies. The exposed face of the bar is rounded to conform to the ordinary shape of curbing at the exposed corner. The steel web extends directly into the body of the concrete. In order to make a positive bond with the concrete a latch-shaped section is cut from the web and bent back as shown in the illustration. These bonding pieces or hooks are made in the bar at comparatively close intervals. The manufacturers state that their system has been accepted by the highway department of Brooklyn, N. Y., under whose direction many miles of steel protected concrete curbing are laid yearly.

### Perfecto Road Float

F. L. Gains, 509 Ashton Bldg., Grand Rapids, Mich., manufactures a road float in three sizes, 10, 12 and 14 feet wide, respectively, which is designed to be drawn by four horses or by a traction engine. The float is a two-sided device, each side working the dirt toward the center of the road. It cuts up and pulverizes the ridges and levels the high places. The surplus of the loosened material after filling up the ruts and low places, is brought back to the center of the road. This is leveled by an A-shaped drag attached to the rear of the float. It is claimed that the device surpasses a road grader in maintenance of highways. Mr. Gains also manufactures repair blades for wheel scraper bowls. They are made of plowshare steel plate, 6 inches by 3-16 inch. The blade gives a new cutting edge, 3 inches wide and 3-16 inch thick, leaving 3 inches to lap top and bottom when riveted on.



HEATED DRUM MIXER—THE RAPID

## NEWS OF THE SOCIETIES

**American Association for Highway Improvement.**—The first annual convention was called to order, November 20, in the auditorium of the Jefferson Hotel, which was filled to its capacity. Addresses of welcome were made by Governor Mann and Mayor Richardson to which L. W. Page, president of the association, responded. Secretary of Agriculture Wilson explained the interest of the department in road construction as a means of reducing the cost of living to the farmer, aiding him in marketing his produce and improving his social condition. He reviewed the work done by the bureau of roads, stating that last year 28 object lesson roads had been built by it and that as a result 730 miles of additional road had been completed as a direct result. Up to the present time 365 such roads have been built. He stated that the laboratories of the bureau were the foremost in the world. They are at the disposal of any citizen who wishes to consult them. The question of asking the Federal Government for an appropriation for road building, divided the convention into two factions. The matter came up in addresses and discussion on the floor of the convention and in the room of the committee on resolutions. Senator Swanson was among the leaders of those who desired government aid. He recommended to the committee on resolutions a plan beginning with an annual appropriation of \$20,000,000 and increasing to \$50,000,000. The second day of the meeting was called engineers and contractors' day. Macadam roads were discussed by W. A. McLean, provincial engineer, of Ontario, Canada; Sand, Clay and Earth Roads by P. St. J. Wilson, State Highway Commissioner of Virginia, and Bituminous Roads by N. W. Crosby, State highway engineer of Maryland. A. H. Blanchard, professor of highway engineering of Columbia University, spoke on Road Cost and Maintenance. The relations of contractor and engineer were discussed by Onward Bates, past president of the American Society of Civil Engineers. Capt. D. L. Hough, of the United Engineering and Contracting Company, New York, spoke on the same subject. Both emphasized the need of better specifications and co-operation. A committee on national highway legislation was appointed, consisting of one member from each State. The committee will probably meet in Washington, during the winter. Representatives of the American Association for Highway Improvement, the American Automobile Association, the American Road Builders' Association, and the National Association of Road Material and Machinery Manufacturers entered into an agreement to hold joint conventions in the future. It was finally agreed to support the bill introduced in the last session of Congress calling for an annual appropriation of \$250,000 to support a committee of five to investigate interstate routes, make surveys and estimates and co-operate with State governments for the construction of interstate highways. A number of resolutions reported favorably by the committee were indorsed en bloc. Among these were resolutions urging upon all road authorities their immediate, continuous and careful attention to the question of road maintenance; recommending that no appropriation for construction be made without proper pro-

vision for maintenance; urging the various States not already provided therewith to adopt legislation, providing for State supervision of at least the main highways of the State, through a State highway department and for State aid in the building and maintenance of such roads; recommending that all work of both construction and maintenance be placed under the direction of experienced highway engineers, and favoring the enactment of proper laws by all the States providing for the employment of prison labor in the improvement of the public highways. The program of the convention closed with discussions on automobile and traffic laws and the employment of convict labor in road building.

**National Municipal League.**—The seventeenth annual meeting was held at the Jefferson hotel, Richmond, Va., November 13-16. Mayor D. C. Richardson made the address of welcome. He outlined the scheme of government of the municipality which is 130 years old and pointed out some of the difficulties in working under it and the reforms which are now in view. The feature of the opening meeting of the Municipal League was the address of its president, William Dudley Foulke, of Richmond, Ind., on the subject, "Effective Municipal Government." The address was in the nature of a sympathetic analysis of the city government of one of Germany's most enlightened municipalities, Frankfort-on-the-Main. He sought, by an inquiry into the methods perfected by the Germans for the administration of their cities to point out in what respects these are superior to those in vogue in America, and to inquire into their applicability to conditions on this side of the Atlantic. Mr. Foulke during the past summer made a first-hand study of Frankfort's city government. He spoke with much enthusiasm and with the evident conviction that America has much to learn from Germany in the matter of municipal administration. In his annual review, Secretary Clinton Rogers Woodruff, said that grafting is becoming more and more unpopular as people come to know more and more about it. The increasing tendency toward an expansion of municipal functions, a simplification of the machinery of city government, and the greater use of the direct primary and methods of controlling public service corporations Mr. Woodruff regarded as the more important progress of the year. "The movement for the establishment of commission government in American cities owes a large part of its success to the fact that it is a simple form of government, easily understood, and providing a short ballot and a simplified form of nomination and election," he said. "The Thralldom of Massachusetts Cities," was delivered by Harvey N. Shepard, of Boston. He told of the utter helplessness of the Bay State municipalities, which are literally creatures of the legislature, with no powers except those expressly delegated to them by their charters. Their every action, he told the assembly, was without force except when aided by legislative enactment—a condition of affairs which militates strongly against effective municipal government. Thomas M. Pittman, city attorney of Henderson, N. C., prefaced his address on "The Problems of Small Cities," with an invitation to Mr. Shepard and his Massachusetts fellow-citizens to move their families and household effects to North Carolina, where cities enjoy

more freedom and where the New England passion for municipal freedom would find an unhampered field. While the problems of the small city are not as large nor as insistent as those of the large cities, said Mr. Pittman, they nevertheless harbor abuses, not the least among which, in his opinion, are looseness in the administration of public business, and an almost criminal propensity for granting franchises without limit. The small city, according to Mr. Pittman, is still inefficiently equipped with competent boards to provide sanitary surroundings, proper inspection of buildings, adequate regulation of hours of labor for women and children, proper inspection of food-stuffs and publicity of administrative proceedings. "City Government by Commission" was the subject of an address by Richard S. Childs, secretary of the Short Ballot Organization. He made out a strong case for the commission plan, which, he said, to put it in the most modest terms, is already a relative success because it is more democratic—that is, more sensitive to public opinion. And it is more sensitive to public opinion because it makes for a unification of powers, placing the power where the people can see it and watch it. This watchfulness, he stated further, is rendered more effective by the short ballot, which is one of the features of the commission plan. R. H. Dana, Cambridge, Mass., speaking on antitoxin for municipal waste and corruption advocated a merit system which would insure experienced and tried men at the head of important trusts, and whose tenure of office would be based solely upon merit and fitness. Charles F. Gettemy, director of the Massachusetts Bureau of Labor, explained the lasting benefits and revolutionizing reforms effected by legislative enactment in Massachusetts in enforcing strict accounting and careful regulation of the power to float loans. Unlike the paper on "The Thralldom of Massachusetts Cities," it found that instead of militating against effective municipal government, the legislature effectively protects it against extravagance and exploitation. Among the recommendations made by a report on street railway franchises was the practical consolidation of the street railway, electric light, heat and power systems, because of the economics to be effected by joint management; accurate description of the specific routes over which the lines are to be operated, with adequate provision for extension or relocation of original lines, thus avoiding the necessity of negotiating a new contract whenever a modification or extension of routes is to be made; obligation on the part of the franchise holder to extend its lines from time to time when required by the city, subject to review as to the reasonableness of the requirement, and retention by the city of the right to build extensions either out of general fund or by means of special assessments on benefited property, and to require the grantee of the franchise to operate such extensions as a part of its street railway system, upon fair terms as to rental. Other papers, as given in the program published in the Municipal Journal were read in due order. Following are the officers elected: President, William Dudley Foulke, Richmond, Ind.; vice-presidents, Jane Addams, Chicago; H. D. W. English, Pittsburgh; William Kent, Kentfield, Cal.; Camillus G. Kidder, New York; A. Lawrence Lowell, Harvard Univer-



sity; George McAneny, New York; Charles Richardson, Philadelphia; treasurer, George Burnham, Jr., Philadelphia; secretary, Clinton Rogers Woodruff, Philadelphia. In the personnel of the executive council the election wrought little change. All the old members, with few exceptions, were elected. The new members of the council are: William M. Chadburne, New York; John Stewart Bryan, Richmond; Edward L. Buchard, Chicago; Frederick Cook Morehouse, Milwaukee; M. F. Hawley, Minneapolis, and W. D. Lighthall, Montreal.

**National Association of Road Material and Machinery Manufacturers.**—At the Richmond Road Congress, November 21, there was formed the National Association of Road Material and Machinery Manufacturers. The charter members of the association include the leading concerns in the United States engaged in the road building industry. Member companies must be road material or machinery manufacturers and not primarily contractors or dealers.

Mr. W. T. Beatty, of the Austin Manufacturing Co., Chicago, was elected President of the Association; S. Jones Phillips, of the American Road Machinery Co., vice-president; Daniel T. Pierce, of the Barber Asphalt Paving Co., Secretary and Treasurer. The office of the association will be 32 Liberty street, New York.

Those who have been elected and accepted representation on the board of director of the association are: Nat Tyler, Sr., Monarch Road Roller Co.; B. C. Hvass, Charles Hvass Co.; H. P. Goodling, A. B. Farquhar Co.; Henry Fisher, Standard Oil Co.; Charles P. Price, American Tar Co.; R. K. Pierce, Solvay Process Co., and J. S. Robeson, Robeson Process Co. The Texas Co., Studebaker Corporation, Watson Wagon Co. and four other manufacturers will have representation on the board.

The annual meetings of the association will be held in connection with a yearly exhibit under the auspices of the association. It is hoped that arrangements can be made for the annual exhibit at joint conventions of the principal good roads organizations. The membership is about 250, representing about \$200,000,000 capital.

**National Association of Automobile Manufacturers.**—Business men engaged in all lines of industry and trade requiring much haulage and delivery of goods or materials will be able to make a study of motor trucks and delivery wagons in New York next January. From the 10th to the 17th of the month there will be gathered together in the Grand Central Palace the most improved models of these machines produced by 35 or more manufacturers. Many of the makes are wholly new to the general public, while most of the companies that have made displays before have added new models to their lines. The machines to be exhibited cover the widest possible range in type of vehicle, load capacity and selling price. As the Grand Central Palace Show is to be held concurrently with the annual motor car exhibition in Madison Square Garden, non-resident visitors who attend either exhibition will be able to see the other without making a second trip to New York. The same manufacturers will not have displays at both shows, and consequently during automobile show week it will be possible to inspect 200 or more of the newest and best models of commercial cars built by 70 different companies.

**Nebraska League of Municipalities.**—The third annual convention was held at Omaha, November 15-17, the first session being held in the city hall. Mayor J. C. Dahlman welcomed the delegates and President Robert P. Starr, of Loup City, responded. The program substantially as published in the MUNICIPAL JOURNAL was carried out. The question of commission government was prominent in informal as well as formal discussion. Mayor George F. Woltz, Fremont, thought it a good thing for a small town like Fremont, where there is not so much complaint about enforcing the laws as demand for economy in handling municipal business. In Fremont the board, composed of three members, represent the business interests of the city. They have acquired the lighting and water plants, and are operating them profitably. Mayor J. R. Stansberry, McCook, favored a commission, with a manager on salary, having the power to appoint employees, subject to approval of the commission. Mayor E. Barsemeyer, Jr., Superior, formed a small commission, with a manager. Mayor Fred H. Davis, Madison, would have salaried men in charge of city affairs, devoting their whole time to the work.

At a dinner of the Omaha Commercial Club, President David Cole, presiding, addresses were made by Howard H. Baldrige, Omaha; Robert P. Starr, Loup City; George W. Craig, City Engineer, Omaha; Mayor J. C. Dahlman and Senator G. M. Hitchcock. President Starr pointed out the necessity for co-operation between cities; City Engineer Craig described the various types of paving and commented on their merits. Ex-Mayor D. E. Love spoke for municipal ownership.

At the second day's session Chief of Police Donahue, of Omaha, described the Bertillon system of identification. He advised all cities of over 5,000 population to establish an identification bureau.

The following officers were elected: George F. Wolz, president; C. J. Miles, Hastings, vice-president; Rosco C. Ozman, Lincoln, secretary-treasurer; J. B. Hummel, Omaha; E. Bossemeyer, Superior, and E. Lehmkuhl, Wahoo, trustees. The next annual convention will be held in Lincoln.

**National Fire Protective Association.**—The association is making an effort to have literature on fire waste placed in public libraries throughout the country. A notice has been sent out to members of the association calling their attention to the fact that only 117 libraries at present have any authoritative literature on this subject. The members are requested to call at their local libraries and verify this, and ask the librarian why, when all the association's publications may be had for \$5 a year, the people should be denied access to literature so vital to the public welfare?

**American Civic Association.**—Richard B. Watrous, secretary of the association, has announced that Walter L. Fisher, Secretary of the Department of the Interior, had consented to act as the presiding officer at the first evening session of the seventh annual convention of the association, which is to be held, New Willard Hotel, Washington, D. C., December 13-15. The evening of December 13 the subject before the convention will be "National Parks, Their Extension, Development and Exploitation," and Secretary Fisher, who is an ardent advocate of the cause of the great public playgrounds of the

nation, not only will preside, but he will take an active part in the discussions.

Another feature which has been secured for the convention is an advance reading of one of Miss Zona Gale's "Friendship Village" stories. At the convention last year Miss Gale read her "Friendship Village Sodality." In response to a general demand for information, Dr. John Quincy Adams, secretary of the New York Commission, will describe the functions of a municipal art commission.

**Oklahoma Municipal League.**—The second annual convention will be held at Tulsa, December 11. Mayors and city officials from every important town and county clerks, commissioners and other officials from nearly every county in Oklahoma will attend the meeting and it is expected that not less than 450 or 500 officials will be here.

The present officers of the Oklahoma Municipal League whose successors will be elected at the Tulsa convention, are as follows: A. F. McGarr, Muskogee, president; F. P. Stearns, Shawnee, first vice-president; A. Neely, Durant, second vice-president; J. A. Cotner, Ardmore, secretary; W. M. Spurlock, Guthrie, treasurer. Executive Committee—E. W. Vance, Oklahoma City; J. A. Cotner, Ardmore; W. M. Spurlock, Guthrie; Pete Hanratty, McAlester, and W. L. LaPryer, El Reno.

A feature of the Tulsa convention will be the municipal exhibits from all the leading cities in the State, showing their improvements, made and contemplated, and many other interesting features of city building. Prominent and well known speakers from other states will address the convention.

**American Gas Institute.**—A notable development in the combustion of illuminating gas was brought to the attention of the gas industry in this country by Prof. William A. Bone, of Leeds, England, at the October meeting in St. Louis of the Institute. The details are not yet available, but it is understood that a discovery has been made by Professor Bone involving the maintenance of incandescence on the surface of a refractory material against which is directed a jet or jets of the gas mixed with perhaps six times the volume of air. The commercial interest lies in the fact that the arrangement secures local high temperature so that furnaces may be built of the refractory material and high efficiency of combustion and high temperature requirements may be met. The form of combustion has been applied to steam boilers.

**Alabama Association of Highway Engineers.**—The organization of the Alabama Association of Highway Engineers has been perfected and the following officers elected: President, W. S. Keller, Montgomery; first vice-president, G. C. Scales, Greenville; second vice-president, J. W. Gwin, Birmingham; secretary, G. N. Mitcham, Auburn; treasurer, D. K. Caldwell, Wetumpka.

**Engineering Association of the South.**—About forty members attended the annual convention in the Chamber of Commerce hall, Atlanta, November 17-18. On Saturday afternoon the party visited the sewage disposal works under construction and in the evening attended a banquet.

**The New England Water Works Association.**—The intention has been announced to devote the regular meeting of December 13, 1911, to the subject of Steel versus Wrought Iron for Service Pipes and The Influence of Methods of Manufacture, especially galvanizing,

upon the durability. The executive committee has issued a notice stating that it is desirable to have a complete discussion of this subject, and all who can be present are urged to come prepared to give the association the result of their experiences.

**Brooklyn Engineers' Club.**—At the regular meeting, November 9, a resolution was unanimously passed requesting Governor Dix to appoint an engineer as member of the New York City Public Service Commission when the next vacancy occurs, February, 1912. In discussing the resolution it was pointed out by referring to specific recent cases that administrative offices requiring an engineer's training are usually filled by lawyers or politicians. The nominations for officers for the coming year have been announced as follows: M. T. Donnelly, president, Joseph Strachan, secretary. The annual meeting will be held December 14.

**Cleveland Engineering Society.**—At a special meeting, November 14, it was decided to co-operate with the Cleveland section of the American Chemical Society and the Cleveland Academy of Medicine to urge immediate legislation for the establishment of a water filtration plant in Cleveland. Experts on water purification from all parts of the United States and Canada addressed the engineering society. Among the speakers were Dr. John A. Amyott, of Toronto; Prof. Langdon Pierce, sanitary engineer, of Chicago; R. Winthrop Pratt, special sanitary engineer of Cleveland; Dr. Roger Perkins, of Western Reserve Medical School and D. D. Vincent.

### Calendar of Meetings

- November 24-25.  
New Jersey Sanitary Association.—Annual Meeting, Lakewood, N. J.—J. A. Exton, Secretary, 75 Beech St., Arlington, N. J.
- December 4.  
American Society of Refrigerating Engineers.—Annual Meeting, New York City.—Wm. H. Ross, Secretary, 154 Nassau St., New York City.
- December 4-9.  
American Public Health Association.—Annual Convention, Havana, Cuba.—William C. Woodward, M.D., Secretary, District Bldg., Washington, D. C.
- December 5-8.  
American Society of Mechanical Engineers.—Annual Convention, New York City.—Calvin W. Rice, Secretary, 29 W. 39th St., New York City.
- December 11-13.  
Association of American Portland Cement Manufacturers.—Annual Meeting, New York City.—Percy H. Wilson, Secretary, Land Title Building, Philadelphia, Pa.
- December 12-14.  
American Institute of Architects.—Annual Convention, Washington, D. C.—Glenn Brown, Secretary, The Octagon, Washington, D. C.
- December 20-22.  
American Institute of Chemical Engineers.—Annual Meeting, Washington, D. C.—J. C. Olsen, Secretary, Polytechnic Institute, Brooklyn, N. Y.
- December 27—January 3.  
American Association for the Advancement of Science.—Annual Meeting, Washington, D. C.—L. O. Howard, Secretary, Smithsonian Institute, Washington, D. C.
- January 29—February 3, 1912.  
Second Annual New York Cement Show—Madison Square Garden.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.
- February 21-28.  
Fifth Annual Chicago Cement Show.—Coliseum.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.
- March 14-21.  
First Annual Kansas City Cement Show.—Convention Hall.—J. P. Beck, General Manager Cement Products Exhibition Co., 72 W. Adams St., Chicago, Ill.

## PERSONALS

DE HAVEN, WALTER B., Bluffton, Ind., for 25 years superintendent of the municipal water works and electric light plant, has been retired on a pension.

HUBBARD, PREVOST, Washington, D. C., has been appointed Lecturer in Engineering Chemistry, Columbia University. He will conduct the courses in bituminous materials given in connection with the graduate courses in highway engineering. In connection with the same course the following non-resident lectures have been appointed: John A. Bense, M. Am. Soc. C. E., New York State Engineer, Albany, N. Y.; Walter W. Crosby, M. Am. Soc. C. E., Chief Engineer, Maryland State Roads Commission, Baltimore, Md.; A. W. Dow, Chemical and Consulting Paving Engineer, New York City; Walter H. Fulweiler, Assoc. M. Am. Soc. C. E., Chief Chemist, United Gas Improvement Company, Philadelphia, Pa.; John M. Goodell, Assoc. Am. Soc. C. E., Editor-in-Chief, *Engineering Record*, New York City; Nelson P. Lewis, M. Am. Soc. C. E., Chief Engineer, Board of Estimate and Apportionment, New York City; Logan W. Page, M. Am. Soc. C. E., Director, United States Office of Public Roads, Washington, D. C.; Harold Parker, M. Am. Soc. C. E., Chairman, Massachusetts Highway Company, Boston, Mass.; Charles P. Price, Assoc. Am. Soc. C. E., Manager, American Tar Company, Malden, Mass.; H. B. Pullar, Chief Chemist, American Asphaltum & Rubber Company, Chicago, Ill.; John R. Rablin, M. Am. Soc. C. E., Chief Engineer, Massachusetts Metropolitan Park Commission, Boston, Mass.; Clifford Richardson, M. Am. Soc. C. E., Consulting Engineer, New York City; Philip P. Sharples, Chief Chemist, Barrett Manufacturing Company, Boston, Mass.; Francis P. Smith, M. Am. Soc. C. E., Chemical and Consulting Paving Engineer, New York City; Albert Sommer, Assoc. Am. Soc. C. E., Consulting Chemist, New York City; George W. Tillson, M. Am. Soc. C. E., Consulting Engineer, Borough of Brooklyn, New York City.

HUBBARD, PREVOST, has been placed in charge of the newly organized division of roads and pavements of the Institute of Industrial Research, Washington, D. C. For the past seven years he has served as assistant chemist and chief chemist at the office of Public Roads and has contributed many articles to the government publications and the technical press.

MARQUART, MAYOR GEORGE B., Lebanon, Pa., has been appointed to the Department of Sealer of Weights and Measures in office of the State Secretary at Harrisburg. He will continue as Chief Executive of the city.

PRATT, R. WINTHROP, Columbus, O., has resigned his position of Chief Engineer of the Ohio State Board of Health and has been appointed a special engineer by the city of Cleveland, O., to investigate and report upon a plan for purifying the sewage of that city.

SALMONDE, HERBERT, formerly of the Chicago Board of Health, has entered upon his new duties as chemist at the filtration plant, Springfield, Mass., Water Works Department.

SMITH, W. ZODE, Atlanta, Ga., has been elected general manager of the water works, defeating Col. Park Woodward.

SPRINGBORN, WILLIAM J., Cleveland, O., has been selected by Mayor-elect Newton B. Baker as Director of Public Service, to succeed A. B. Lea, on January 1. Mr. Springborn filled this office from 1903 to 1910.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago: Prospects for the coming season are increasingly encouraging. Quotations: 4-inch, \$26.50; 6 to 12-inch, \$24.50; 16-inch and up, \$24. Birmingham. Inquiries now pending consist mainly of lots of 300 to 500 tons each. No change has been made in prices and prices are being fully maintained for the small lots offered. It is now probable, however, that addition to the active producing capacity that has been in contemplation some time will not be made until late in the first half of next year. This is largely due to the delay in advertising certain large municipal contracts that will of necessity be placed, as well as the failure to develop certain orders for gas mains. Quotations: 4 to 6-inch, \$23; 8 to 10-inch, \$22; 12-inch and over, average, \$21. San Francisco. The general demand is picking up, though small orders are still the rule. New York. Buyers are coming into the market quite freely for next year's delivery. The tonnage of this character now in sight runs into important figures. The situation is much better than a year ago. Prices are firmer. Quotations: 6-inch, car loads, \$22 to \$23.

**Lead.**—The American Smelting & Refining Company on November 16 advanced its quotations to 4.35c., New York, for shipment lead in 50-ton lots. The price at St. Louis is relatively firmer, lead being sold by independents there at 4.27½c. The production of lead for 1910 as figured by the United States Geological Survey was 470,380 tons of 2000 lb., compared with 448,112 tons in 1909.

**Rubber Tires.**—The United States Tire Company has recently placed on the market a new tire branded "United States Standard Tire." It is said to be the first to meet all requirements of specifications recently adopted by the Society of Automobile Engineers. A special merit claimed for this tire is that through its use both single and double tires can be changed without removing the wheel from the truck.

These demountable features are possible through making the inside diameter of the tire band three-eighths of an inch greater than the outside diameter of the wheel. This additional size gives a clearance between the tire band and the wheel band of three-sixteenths of an inch. Into this open space wedges are forced, which are part of the flanges. In making replacements it is only necessary to take off the flange wedges and remove the tire. The tire itself is built on a steel band with a layer of hard rubber between the band and the soft rubber tread. The band has a serrated periphery so as to form a dove-tailed seat for the hard rubber.

**Motor Apparatus.**—The extensive new plant of the Victor Motor Truck Company, Buffalo, N. Y., manufacturers of motor fire apparatus, now building at Military and Beaver roads and the New York Central Railroad, North Buffalo, is nearing completion.

**Tank Cars.**—The Pennsylvania Tank Car Company, Pittsburgh, recently incorporated, will build a plant on the property of the Petroleum Iron Works Company, adjoining its plant at Sharon, Pa. The company will manufacture tank cars and repair old cars. G. F. Woodsmith is president and general manager, and work has been started on the construction of 1,700 ft. of switches for storing cars.



**Hydrants and Valves.**—The Pratt and Cady Co., Hartford, Conn., have announced that hereafter they will market their entire product themselves, doing away with the assistance of the Fairbanks Company, who have had the exclusive sales agency for the goods for twenty-eight years. It is further announced that George Walworth Hayden has been elected president succeeding John Spencer Camp, resigned. George L. Spence has been appointed salesmanager and the following branch stores have been opened: New York, 259 Canal street, A. M. Page, manager; Boston, 130 High street, W. D. Cashin, manager; Pittsburgh, 321 Third avenue, W. E. Messenger, manager; Detroit, 85 Jefferson avenue, Henry Jeffrey, manager; New Orleans, W. W. Wyneken, manager; Chicago, 157 West Lake street, W. G. Wentworth, manager; Indianapolis, 501 Board of Trade Bldg., J. M. Goldsmith, manager; Philadelphia, 507 Arch street, McArdle & Cooney, agents; Hartford, 198 Pearl street, Hartford Mill Supply Co., agents.

**Paving Machinery.**—Hetherington & Berner, Indianapolis, Ind., founders and machinists, have moved into their new home at Kentucky avenue and White River. The buildings, which are fireproof, cover about three acres and include a structural steel shop with 12,800 sq. ft. of floor area; foundry, 13,600 sq. ft.; machine shop, 13,700 sq. ft. with a mezzanine floor as a pattern shop with 10,000 sq. ft.; office building with engineering and drafting departments on the second floor; power house, with both steam and electric energy, and a large blacksmith shop and storage buildings. In all there is a total of more than 70,000 sq. ft. of floor area. Saw tooth roofs and plenty of large windows give ample light, and the equipment is of the most modern type, including electric hoists in the yards for loading and unloading cars. The establishment does a general mechanical business, giving special attention to asphalt plants and machines for making encaustic tile. It was founded in 1867 by B. F. Hetherington and Frederick Berner, Sr., and is now controlled by their descendants.

**Gas Engine Orders.**—The Bruce-Macbeth Engine Company, Cleveland, O., builders of vertical multi-cylinder gas engines, reports among the sales recently made, the following for municipal lighting: 300 hp., four-cylinder, producer gas. Patapasco Electric & Mfg. Co., Ellicott City, Md.; 300 hp., four-cylinder natural gas, Canal Dover, O., second order.

**Steam Turbine Outfits.**—The Kerr Turbine Co., Wellsville, N. Y., advises that over 700 of their machines, aggregating more than 50,000 hp. are in active service and that more unfilled orders are now booked than at any previous time in the history of the company. Although their plant has been materially enlarged, a night shift has been necessary for the past two and a half years. Among the recent sales were two 75 kw. lighting sets for waterworks service for the city of Chicago.

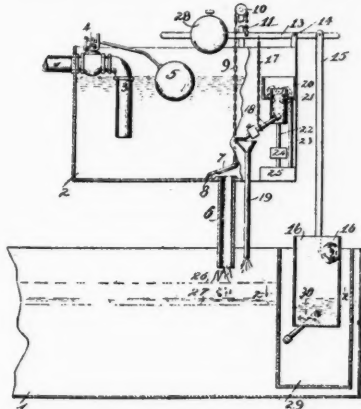
**Crushing Plant.**—A stone crushing plant of considerable proportions is to be built at Cleveland, Tenn., by Rymer Bros.

**Sewer Pipe.**—The Pacific Sewer Pipe Company, Los Angeles, Cal., is planning to add to its five plants already in operation a sixth which will cost \$350,000.

## PATENT CLAIMS

**1,007,442. AUTOMATIC DISINFECTING DEVICE.** Thomas Francis Haheey, Chelsea, Mass. Serial No. 585,593.

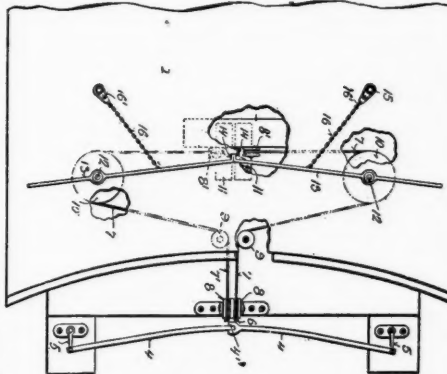
The combination of a flushing tank, a tank adapted to contain a disinfectant and provided with a pocket and a cylindrical member, an outlet pipe extending from said pocket, a lever on the flushing tank, and



a bar extending over the second named tank having a hook thereon in engagement with the said lever on the flushing tank, a piston entering the said pocket and the said cylindrical member, whereby, as the lever is operated, an amount of disinfectant will be supplied to the flushing tank.

**1,007,190. SAFETY-GATE FOR BRIDGES.** Casper Faust, Oshkosh, Wis. Serial No. 631,304.

In a horizontally swinging bridge having a tappet adjacent to its end, and an abutment with which the bridge is adapted to register; the combination of a vertical movable head, a centrally disposed guide-track for the head secured to the abutment, vertically movable camrails carried by the head, a supporting means for the outer



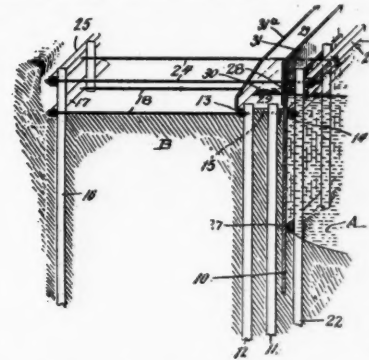
ends of the cam-rails, oppositely disposed posts journaled in said abutment, a gate secured to each post above the aforesaid abutment, a sheave secured to each post below the abutment, a cable secured to each sheave having one end connected to the head, weights connected to the opposite ends of said cables, and guide-sheaves for said cables.

**1,009,097. STREET WASHING AND SPRINKLING MACHINE.** William Ratican, St. Louis, Mo., assignor to St. Louis Street Flushing Machine Co., St. Louis, Mo., a Corporation of Missouri. Serial No. 348,516.

A traveling watering apparatus comprising a water tank, a downturned supply pipe for said water tank, a strainer located in said supply pipe close to and above the open end thereof and comprising a perforated diaphragm, a delivery pipe for said water tank, and a nozzle on said delivery pipe having a plurality of comparatively small delivery apertures arranged in parallel rows, the delivery apertures being larger than the apertures of the strainer, the delivery apertures of one row being arranged to overlap two adjacent apertures in another row.

**1,006,247. DOCK CONSTRUCTION AND METHOD OF CONSTRUCTING DOCKS.** Edgar D. Martin, Chicago, Ill. Serial No. 604,763.

A dock construction, comprising a series of driven cap supporting piles, a bulkhead secured in position on the water side



of all of said cap supporting piles, and a cap over said piles and located wholly on the land side of the bulkhead.

**1,008,395. SIDEWALK-FORM.** Joseph Ubbink, Port Washington, Wis. Serial No. 551,262.

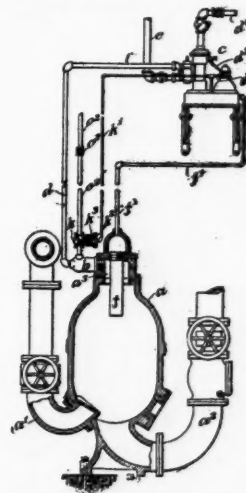
A knock-down form for concrete work consisting of side rails provided with outwardly extending flanges along their lower edges and with notches in their upper edges extending toward said flanges, division plates provided with notches in their lower edges and so proportioned that the division plates may at their notched portions fit into the notches of the said rails and be supported at the ends upon the flanges of the side rails.

**1,006,794. SPUDDING DEVICE FOR WELL-BORING MACHINES.** George P. Riggs, St. Marys, W. Va. Serial No. 541,264.

A spudding device for well boring machines, comprising a tubular mast, a rod mounted to slide in the upper end of the mast and provided with a bearing at its outer end, a sheave mounted in the bearing, a hoisting device, a cable secured to the hoisting device, passed over the said sheave and carrying a boring tool at its free end, beams pivoted intermediate of their ends on opposite sides of the upper end of the mast, links pivoted to opposite sides of the bearing of the sheave and each adjustably pivoted to one of the said beams, a bail connecting the other ends of the beams, a revoluble shaft mounted on the support of the hoisting device and having a crank arm, and a jerk line having one end secured to the crank arm and its other end to the said bail.

**1,006,822. APPARATUS FOR EJECTING FLUID MATTER.** Hubert Beddoes, Philadelphia, Pa. Serial No. 613,889.

In apparatus of the character described, the combination of a tank to contain fluid matter having a discharge pipe, an air-



pressure pipe and a steam pipe leading to said tank, and valve mechanism controlling said steam pipe and air pipe to control the admission of steam and air together to said tank.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

### BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
Ohio	Youngstown	Dec. 1	Paving two street	Board Public Service.
Alabama	Dadeville	Dec. 1, 1 p.m.	Grading and draining 11 miles road	County Commissioners.
Illinois	Glen Ellyn	Dec. 1, 8 p.m.	Constructing sanitary sewers and disposal plant	Board Local Improvements.
Ohio	Cincinnati	Dec. 1, noon	Improving road	County Comm.
Alta., Can.	Edmonton	Dec. 1, noon	Constructing 100,000 sq. yds. wood block, asphalt block, sheet asphalt, bit. or other pavement	City Commissioner.
Illinois	Springfield	Dec. 1	Constructing 600 sq. yds. brick paving	W. Seeley, City Engineer.
Ohio	Cleveland	Dec. 2, 11 a.m.	Constructing culverts in Falls Road	County Committee.
Indiana	Greencastle	Dec. 2, 11 a.m.	Constructing 6 miles macadam and gravel roads, 5 contracts	D. V. Moffett, County Auditor.
Mississippi	Brandon	Dec. 4	Constructing 65 miles public roads. Cost \$25,500	J. A. Hammond, Highway Com.
Indiana	Fowler	Dec. 4, 7 p.m.	Constructing gravel roads	L. Shipman, County Auditor.
Indiana	Williamsport	Dec. 4, 1 p.m.	Constructing gravel road	D. H. Moffat, County Auditor.
Indiana	Greenfield	Dec. 4, 2 p.m.	Constructing macadam road	C. H. Troy, County Auditor.
Mississippi	Brandon	Dec. 4	Constructing 75,000 cu. yds. earth excavation, 1,000 cu. yds. rock, 28,000 cu. yds. sand clay surfacing	Highway Committee, Rankin Co.
Indiana	Huntington	Dec. 4, 10 a.m.	Constructing gravel roads	J. W. Wheeler, County Auditor.
Mississippi	Senatobia	Dec. 4, 2 p.m.	Constructing roads	J. A. Vooten, Chancery Clerk.
New York	Yonkers	Dec. 4	Regulating and grading street	Board of Contract and Supply.
Indiana	Columbus	Dec. 4, 10 a.m.	Constructing gravel road and macadamized road	County Commissioners.
Indiana	Logansport	Dec. 5, 10 a.m.	Constructing stone road	J. E. Wallace, County Auditor.
Indiana	Valparaiso	Dec. 5, 10 a.m.	Constructing gravel roads	C. A. Blachley, County Auditor.
Indiana	Crawfordsville	Dec. 5, 10 a.m.	Improving roads in Coal Creek township	B. B. Engle, County Auditor.
Indiana	Vincennes	Dec. 5, 2 p.m.	Constructing gravel roads, 3 contracts	J. T. Scott, Auditor Knox County.
Indiana	Rockville	Dec. 6, 1:30 p.m.	Constructing gravel roads	J. E. Elder, Auditor.
Florida	Jacksonville	Dec. 6, 10 a.m.	Constructing 2 reinforced concrete culverts	G. L. Barnard, County Engineer.
Indiana	Lafayette	Dec. 6, 10 a.m.	Constructing three gravel roads	County Commissioner.
Ohio	Akron	Dec. 6, noon	Paving Highland Avenue	J. W. Gauthier, Dir. Pub. Serv.
Pennsylvania	Glassport	Dec. 9, 8 p.m.	Grading, paving and curbing Arch Street	M. E. Randell, Boro. Clerk.
Louisiana	New Orleans	Dec. 11, noon	Constructing 9½ miles of highway	Dept. Board State Engineers.
New Jersey	Beach Haven	Dec. 11, 8:30 p.m.	Constructing gravel road	S. S. Andrews, Boro. Clerk.
Indiana	Evansville	Dec. 14, 10 a.m.	Repairing turnpike with rock and gravel	C. B. Beard, Clerk.
Alabama	Hamilton	Dec. 21	Constructing 13½ miles gravel road	County Commissioners.
Florida	Jacksonville	Dec. 29, 10 a.m.	Constructing road of brick or asphalt macadam	G. L. Barnard, County Engineer.
Minnesota	Winona	Jan. 10	Constructing 20 miles macadam roads	J. Winczewski, County Auditor.
Indiana	Laporte	Jan. 11, 1912	Const. asphalt concrete pavement on Pine Lake Ave.	W. Krueger, Clerk.
<b>SEWERAGE</b>				
Ohio	Youngstown	Dec. 1, noon	Constructing sewer	W. H. McMillin, Dir. Public Service.
Maryland	Cumberland	Dec. 1, noon	Constructing water-works	Evitts Creek Water Co.
Indiana	Muncie	Dec. 2	Constructing sewer in Seymour Street	Board Public Works.
New York	Newburg	Dec. 4, 5 p.m.	Reconstructing sewer	City Clerk.
New York	Yonkers	Dec. 4	Constructing sewer, cost \$40,000	Board of Contract and Supply.
Kansas	Atchison	Dec. 4	Constructing 14,500 ft. 6-in. to 5-ft. sewers	S. K. McCrary, City Engineer.
Connecticut	Waterbury	Dec. 5, 8 p.m.	Constructing sewer	R. A. Cairns, City Engineer.
New York	Newburgh	Dec. 5, 5 p.m.	Constructing clay pipe sewer in Robinson Ave.	City Clerk.
Ohio	Akron	Dec. 6, noon	Extending outlet of sewer in river	J. W. Gauthier, Dir. Pub. Serv.
New York	Binghamton	Dec. 6, 4 p.m.	Constructing clay pipe sewer	Board Contract and Supply.
Indiana	Fort Wayne	Dec. 7, 7:30 p.m.	Constructing 2 sewers	Board Public Works.
Pennsylvania	Norristown	Dec. 11	Constructing sewage disposal plant	S. Cameron Corson, Boro. Eng.
Massachusetts	New Bedford	Dec. 12, 8 p.m.	Constructing 12,000 linear ft. reinforced concrete sewer 7 ft. x 7 ft. 8 in. with appurtenances	W. F. Williams, City Engineer.
Manitoba, Can.	Neepawa	Dec. 15, 8 p.m.	Constructing sewerage system	J. W. Bradley, Secy. and Treas.
Ohio	Pleasant Ridge	Dec. 16, noon	Laying 62,746 lin. ft. sewer pipe, 5,042 ft. c. i. pipe, 451 ft. lock bar pipe, etc.	H. B. Hayden, Village Clerk.
Pennsylvania	McKeesport	Dec. 27, 7:30	Constructing 8 and 15-in. clay pipe sewers	S. E. Soles, City Comptroller.
Ohio	New Phila.	Jan. 15	Constructing 11.8 miles sanitary sewers and 3 miles storm water sewers, cost \$140,000	G. E. Arnold, Engineer.
Missouri	Hannibal	Feb. 1	Constructing clay pipe and concrete sewers, cost \$30,000	W. Y. Use, City Clerk.
Illinois	Edwardsville	Mar. 1	Constr. about 3,000 ft. of 8 to 18-in. pipe sewers	C. L. Pitchford,
<b>WATER SUPPLY</b>				
India	Howrah	Dec. 1, 4 p.m.	Furn. 2 triple expansion engines coupled to centrifugal pumps, capacity 8,000 gals. per minute	C. F. Payne, Chm. Municipal Comrs.
Illinois	De Kalb	Dec. 2	Drilling well 1,350 ft. deep	Water Committee.
Illinois	Chicago	Dec. 2, 11 a.m.	Furnishing 3 vertical triplex pumps, capacity 25,000,000 each	Commissioners Pub. Works.
Ohio	Hubbard	Dec. 2	Constructing water works system, stand pipe, pumps, 5¼ miles mains	City Clerk.
Tennessee	Clarksville	Dec. 4, 2 p.m.	Constructing reinforced concrete sedimentation basins, clear water reservoirs, filter tanks and pumping station	S. J. Lowe, Supt. Water Depart.
North Dakota	Fargo	Dec. 4, 5 p.m.	Constructing 6-in. water main	E. R. Orchard, City Auditor.
Oklahoma	Muskogee	Dec. 5, 10 a.m.	Furnishing 6,000,000 gallon pumping engine	Mayor.
Washington	Elma	Dec. 5, 3 p.m.	Constructing water works and pumping plant	C. M. Long, Town Clerk.
Pennsylvania	Erie	Dec. 6, noon	Furnishing 20,000,000 gallon pumping engine	Water Works Commission.
Ohio	Cleveland	Dec. 6	Constructing Westside Lake tunnel, (re-advertisement)	A. B. Lea.
North Carolina	Charlotte	Dec. 7, 8 p.m.	Building Pumping building, suction well and intake; laying 160 ft. 36 in. pipe in rock trench	Board Water Commission.
Alabama	Piedmont	Dec. 9	Constructing water works extension and electric light plant. Cost \$25,000	City Clerk.
Idaho	Boise	Dec. 10	Constructing dam, power house and pumping station	Crane Falls Power & Irrig. Co.
Delaware	Wilmington	Dec. 11	Constructing foundation for water turbine and pumps	Board Water Com.
Iowa	Mason City	Dec. 12, 8 p.m.	Furnishing 3,000,000 gal. pump, including condensers	J. H. McEwen, City Clerk.
Oklahoma	Bennington	Dec. 15, 8 p.m.	Constructing about 12,000 ft. c. i. water pipe, also pumping station, tank and tower	Jesse Sides, Town Clerk.
Manitoba, Can.	Neepawa	Dec. 15	Constructing water works	J. W. Bradley, Secy. and Treas.
Louisiana	Loreauville	Dec. 15	Constructing water works (Postponed from Nov. 15)	Board Aldermen.
Canada	Quebec	Dec. 20	Constructing 40 and 44-in. c. i. pipe, special valves, etc.; alternative, steel pipe	City Clerk.
Australia	Brisbane, Qld.	Jan. 30, noon	Furnishing a 6 million gallon pumping plant of 2 or 3 units	G. E. Johnston, Secy. Board, Albert St., Brisbane, Queensland.



## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
<b>BRIDGES</b>				
Oregon.....	Portland.....	Dec. 1.....	Building superstructure of bridge.....	Mayor.
Ohio.....	Wapakoneta.....	Dec. 2, 11 a.m.....	Constructing superstructure.....	A. E. Schaefer, County Auditor.
Ohio.....	Cleveland.....	Dec. 2, 11 a.m.....	Constructing bridge work.....	County Commissioner.
Maryland.....	Indianhead.....	Dec. 2, 11 a.m.....	Constructing tide bridge and rebuilding wharf.....	Navy Department.
Ohio.....	Toledo.....	Dec. 5.....	Constructing Bascule bridge (date extended from Nov. 25).....	J. Cowell, Dir. Pub. Service.
Indiana.....	Petersburg.....	Dec. 5.....	Constructing 5 bridges.....	J. D. Gray, County Auditor.
Ontario, Can.....	Walkerton.....	Dec. 5.....	Constructing 3 span steel bridge, 2 abutments and 2 piers.....	Jas. Warren.
Florida.....	Jacksonville.....	Dec. 6, 10 a.m.....	Constructing reinforced concrete bridge.....	G. L. Barnard, County Engineer.
North Carolina.....	Castle Hayne.....	Dec. 6, noon.....	Constructing highway bridge.....	D. McEachern, Chm. Bd. Co. Com.
Kansas.....	Wichita.....	Dec. 11.....	Constructing 3 bridges.....	Jesse Leland, County Clerk.
New York.....	Fulton.....	Dec. 18, 8 p.m.....	Constructing concrete steel bridge.....	J. A. Foster, Board of Public Wks.
Iowa.....	Council Bluffs.....	Dec. 19, 2 p.m.....	Constructing wooden and steel bridges (Readvertisement).....	Board of Supervisors.
Ohio.....	Dayton.....	Dec. 21.....	Constructing hand-lift bridge over canal.....	County Commissioner.
Louisiana.....	New Orleans.....	Dec. 28, 11 a.m.....	Constructing Strauss Trunnion Bascule Bridge.....	Chas. R. Kennedy, Comptroller.
Iowa.....	Preston.....	Jan. 4, 1:30 p.m.....	Bridge work, cost \$15,000.....	T. S. DeLay, County Survey.
Georgia.....	Atlanta.....	Jan. 15.....	Constructing viaduct, cost \$66,220.....	Robt. Clayton, Chm. Construction.
<b>LIGHTING AND POWER</b>				
Iowa.....	Corydon.....	Dec. 5.....	Constructing electric light plant.....	J. J. C. Bower, Town Clerk., Iowa Engineering Co., Clinton.
Kansas.....	Kansas City.....	Dec. 5.....	Furnishing and directing an arc-lamp equipment, 450 lamps.....	J. B. Little, City Clerk.
New York.....	New York.....	Dec. 5.....	Furnishing and installing lighting system in 2 engines houses.....	Jos. Johnson, Fire Com.
North Carolina.....	Enfield.....	Dec. 6, 8 p.m.....	Constructing electric light plant.....	Mayor.
Louisiana.....	New Orleans.....	Dec. 7, 3 p.m.....	Furnishing 6,000 KW. Turbo-generator, 150 KW. converter and 7 panel switch-board.....	F. S. Shields, Secretary.
Florida.....	Fernandina.....	Dec. 13, noon.....	Furnishing 2 100 H.P. boilers.....	G. L. Baltzell.
Virginia.....	Richmond.....	Dec. 15, 3 p.m.....	Furnishing, operating, repairing and maintaining 1,200 incandescent mantle street lamps; alternative bid for furnishing material only.....	W. P. Knowles, Superintendent.
Dist. Columbia.....	Washington.....	Dec. 18.....	Gas franchise for city of Manila for 50 years.....	B. of I. A., War Dept., Wash., D.C.
Illinois.....	Litchfield.....	Dec. 18.....	Installing lighting system, 85 lamps.....	City Clerk.
Dist. of Col.....	Washington.....	Dec. 20, 3 p.m.....	Installing lighting fixtures and wiring Post Office, Westfield, Mass.....	J. K. Taylor, Supervising Architect.
Illinois.....	Decatur.....	Dec. 28.....	Furn. engine and 100 KW generator, switchboard and other equipment.....	Albert Leach, City Clerk.
Kentucky.....	Louisville.....	Jan. 4, noon.....	Furnishing power equipment for city hospital including lighting, ventilating, vacuum cleaning and other equip.....	Board Hospital Commissioners.
Australia.....	Brisbane.....	Jan. 30, noon.....	Designs, supply and erection at Mount Crosby Pumping Station of alternatively one, two and three complete units consisting of power generating pumps and plants, etc.....	Geo. Johnston, Albert St., S.&W.Bd
<b>FIRE EQUIPMENT</b>				
Minnesota.....	Duluth.....	Dec. 1, 3 p.m.....	Furnishing and installing fire alarm system.....	Board Fire Commissioners.
California.....	Pasadena.....	Dec. 5, 10:30 a.m.....	Furnishing one motor propelled fire engine and hose wagon and 1 motor propelled auto chemical engine and hose wagon.....	Herman Dyer, City Clerk.
<b>MISCELLANEOUS</b>				
Indiana.....	Fort Wayne.....	Dec. 4, 3 p.m.....	Collecting and removing kitchen garbage for 1912.....	Board Public Works.
Sask., Can.....	Moose Jaw.....	Dec. 4, 8:30 p.m.....	Furnishing motor pumping engine, motor propelled steam pumping engine or horse drawn steam pumping engine.....	W. F. Heal, City Clerk.
Massachusetts.....	Boston.....	Dec. 5.....	Proposal for disposal of refuse for 10 years.....	L. K. Rourke, Comr. Pub. Wks
New York.....	New York.....	Dec. 5, noon.....	Constructing Section 9 Lexington Ave. Subway.....	Public Service Commission.
Ohio.....	Cleveland.....	Dec. 5.....	Constructing roof of new city hall building.....	A. B. Lea.
Ontario, Can.....	Toronto.....	Dec. 5, noon.....	Furnishing asphalt, asphalt blocks, cement, granite paving, granite boulders, signs, treated wood blocks, brass and bronze castings, c. i. pipes, hydrants, valves, stop cock boxes, iron castings, sewer pipe, etc.....	C. H. Rust, City Engineer.
Indiana.....	Indianapolis.....	Dec. 6.....	Collecting and disposing of garbage for period of 1 to 6 years beginning May, 1912.....	Board of Public Works.
Pennsylvania.....	Pottsville.....	Dec. 12, noon.....	Installing lighting fixtures, fire alarm system, etc., for hospital.....	County Comptroller.
Dist. of Col.....	Washington.....	Dec. 23, 11 a.m.....	Constructing steel concrete floor, iron balcony, stairs, railings, etc. at U. S. Naval Magazine, Fort Lafayette N. Y.....	R. C. Hollyday, Chief Bureau.

## STREET IMPROVEMENTS

**Modesto, Cal.**—Representatives of county good roads movement, in which it is planned to bond Stanislaus for \$4,500,000, met in this city for purpose of discussing plans for issue.

**San Francisco, Cal.**—Finance Committee of Board of Supervisors has allowed Board of Public Works following amounts for repairing streets: Zoe st., between Bryant and Brannan, \$3,500; Freelon st., from 4th to Zoe, \$2,500; 24th st., from Harrison to Bryant, \$3,500. The Works Board has requested also \$5,000 for repairing Kentucky st., from the Islais culvert and Burke st., and \$2,500 for paving Hyde st., from Bush to Pine sts.

**San Jose, Cal.**—San Benito County has voted in favor of \$300,000 bond issue for good roads.

**San Jose, Cal.**—If State Highway Commission will build road connecting San Jose, Los Gatos and Santa Cruz through Santa Cruz Mountains via Los Gatos Canyon, people of Santa Cruz County stand pledged to build road connecting Santa Cruz with main highway down coast at Watsonville.

**South Pasadena, Cal.**—City Council is considering petition calling for improvement of Hawthorne st.

**Venice, Cal.**—Improvements have been planned for roads in Venice back country.

**St. Augustine, Fla.**—Board of County Commissioners has accepted proposition of Duke M. Forrest, of Chicago, who agreed to take \$40,000 road warrants, and will use funds for construction of hard surfaced highways across county.

**Evansville, Ind.**—Plans are being prepared for improving 12 streets in 1912.

**Indianapolis, Ind.**—Following streets will be improved: Cornell, from 34th to 36th; walks and curb. Broadway, from 34th

to fair grounds; walks and curb. Herbert, south side, from Gent to Sugar; walk.

**Marion, Ind.**—Petition has been filed asking that Fankboner road be improved by grading and covering with crushed stone.

**South Bend, Ind.**—Repairing of Michigan st., from Monroe st. to La Salle ave., with asphalt is being considered.

**Sioux City, Ia.**—Paving of Morningside ave. is being favorably considered.

**Sioux City, Ia.**—Opening of 11th or 14th st. into city, and building of bridge across Floyd River, are being considered; estimated cost, \$10,000.

**Fort Scott, Kan.**—Resolution has been passed authorizing the grading and macadamizing portion of Judson st. north of Humboldt ave., and portion of Linker st.

**Ft. Scott, Kan.**—Resolution has been passed providing for grading and macadamizing portion of National ave.

**Fort Scott, Kan.**—Resolution has been passed providing for grading and macadamizing of portion of Main st.

**Leavenworth, Kan.**—Ordinance has been passed authorizing the paving north and south alley in Block 26 Fackler's Addition from Arch St. to intersection of two alleys, and east and west alley from intersection to Fifth st.; estimated cost \$1,337.10.

**Elkton, Md.**—Cecl County Commissioners have decided to issue \$25,000 in bonds to improve highway between Elkton, North East and Perryville.

**Kalamazoo, Mich.**—City Council has ordered City Engineer to prepare estimates on paving with asphalt-macadam following streets: East ave., Lincoln ave., Harrison st., Gull st., one block on Ransom st., North Pitcher st., Porter st., North and South West st., Douglas ave., Dutton st., South Burdick st., Portage st., Third st. and Alcott st., from Burdick to Portage.

**Jersey City, N. J.**—Grading and improving of Centre st., from Hudson blvd. west to end of street, and Palisade ave., from Bulls ferry rd. to county line, has been authorized.

**Long Branch, N. J.**—Resolution has been adopted by Board directing county engineer to make survey and prepare maps, plans and specifications for building of second section of Sea Bright-Highlands road.

**Ocean City, N. J.**—City Commissioners will extend Boardwalk from 17th to 23d st.

**Albany, N. Y.**—According to plans submitted streets are to be carried under tracks in subways, with no change in grade of railroad. Cost is to be about \$400,000, half to be paid by railroad, one quarter by Albany and one-quarter by State.

**Amityville, L. I., N. Y.**—State will macadamize portion of South Country rd., which lies within incorporated village of Amityville.

**Niagara Falls, N. Y.**—State Highway Commission will receive bids for section of Buffalo-Niagara Falls blvd., between La Salle and N. Tonawanda, distance of 3.45 miles.

**Rochester, N. Y.**—Common Council will consider widening of Spring st.

**Cincinnati, O.**—City Engineer Shipley has submitted to Service Director Sundmaker estimate of cost on proposed concrete steps in Liberty st., from Reading rd. to Highland ave. Estimate is \$4,398.

**Cincinnati, O.**—Ordinance has been passed authorizing the widening of Sixth ave. and Baymiller st.; estimated cost \$30,500.

**Cincinnati, O.**—Director of service has submitted following approximate estimates of cost of improving: Exeter st., from Western to McLean ave., granite blocks, \$9,625; Charlton st., from Scioto to Dennis

st., macadam, \$3,315. Report of receipts and disbursements, waterworks department, for month of October, 1911. Communication from F. H. Shipley on subject of improving Morten st. Also total costs of improving: Whiteman st., from Bank to Dayton st., wood blocks, \$4,644.73; Craig ave., from Montana to Evergreen ave., macadam, \$8,745.61. Communication from Charles Spencer on subject of condition of Pueblo st.

**Cincinnati, O.**—Council has passed ordinances authorizing following bond issues: For \$135,000 for the resurfacing and improvement of Central ave., from 4th to 8th ave.; Beldare ave., Urwiler ave., Vine st., from 4th ave. to the canal; Carlisle ave., from Central ave. to Cutter st.; Elizabeth st., from Central ave. to Mound st.; Division st. and Liddell st.; also the sewerage of Sturgis ave. and right of way. For \$9,000 for the improvement of Powers st. For \$6,000 for the improvement of Gholson ave. For \$9,600 for the improvement of Rankin st., Sperber st., Adler st. and Engelbrock alley with concrete steps; also Yonkers st. by paving. For \$19,700 for the improvement of Harriet st. from Budd to Clark. For \$5,000 for property for the extension of Yale ave. For \$2,200 for property for the extension of McDowell alley. For \$30,500 for property for the widening of the northeast corner of Sixth ave. and Baymiller st.

**Girard, O.**—Resolution has been passed authorizing village engineer to prepare plans for paving of State st., between Squaw Creek bridge and southern limits of corporation.

**Youngstown, O.**—Following streets have been ordered paved: Hawn st. to Truesdale ave.; Byron st.; Himrod ave. from Truesdale ave. to city limits; Oak st. from Truesdale ave. to city limits; Shehy st. from Truesdale ave. to city limits; Poland ave. from Cedar st. to Woodland ave.

**Chester, Pa.**—Petition has been received requesting that Edgemont ave. from 3d to 12th sts. be paved.

**Pittsburgh, Pa.**—Widening of Butler plank road from Pittsburgh to Butler is being discussed.

**Columbia, S. C.**—Resolution has been passed by council, providing for paving of Lady st. from Main to Sumter st.

**Chattanooga, Tenn.**—Construction of highway between Chattanooga and Knoxville will shortly commence.

**Knoxville, Tenn.**—Ordinance has been presented authorizing issuance of \$15,000 short term bonds to pay city's part of paving on Baxter ave.

**Beaumont, Tex.**—Election will be held Dec. 20 for voting on bond issue for street paving.

**Dallas, Tex.**—Petition is being considered for paving of East Side ave., from Fitzhugh to Garrett, and Collett ave., from East Side to Columbia.

**Ft. Worth, Tex.**—Election will be held Dec. 12 for voting on \$1,600,000 bond issue for good roads and bridges.

**Orange, Tex.**—Petition is being considered from taxpayers of Precinct Nos. 3 and 4, asking for election to determine if these precincts shall issue bonds for \$75,000 for road purposes.

**Pecos, Tex.**—Commissioners have called election Jan. 19 for voting on \$100,000 road bond issue for Precincts 1 and 4.

**Sherman, Tex.**—Petition has been presented to Commissioners' Court signed by more than 1000 taxpayers, asking for precinct election to determine whether good roads bonds in sum of \$400,000 shall be issued. It is desired that election be held Dec. 5.

**Norfolk, Va.**—County supervisors have voted to build road from South Norfolk to Kempsville to cost about \$10,000, including drawbridge across Indian Creek.

**Norfolk, Va.**—County is considering \$200,000 bond issue for road improvements.

**Portsmouth, Va.**—It has been recommended by Board of Road Reviewers, at meeting of the Norfolk County Board of Supervisors, in this city, to establish public road and build bridge in Washington magisterial district to afford shorter travel from South Norfolk to Kempsville.

**Portsmouth, Va.**—Construction of road connecting Key road with Glasgow st. is proposed.

**Green Bay, Wis.**—Common Council has authorized paving of Main st. to 5th, 5th st. to Grant, 4th st. to Grant, and Grant st. to C. & N. W. depot.

### CONTRACTS AWARDED

**Birmingham, Ala.**—By City Commission, for paving of 8th ave., from W. 20th st. to 28th st., to Southern Bitulithic Co.

**Bakersfield, Cal.**—To D. B. Mosher, at \$14,010, for construction of Cole's Levee Road.

**Los Angeles, Cal.**—By Bd. of Pub. Wks., for paving, as follows: To Fairchild, Gilmore, Wilton & Co., Pacific

Electric Bldg., for N. Bway at \$20,173, for 7th st. at \$20,173; to W. E. Nichols for Hobart Boule. at \$8,191, and Central ave. at \$4,456, and to J. E. Shafer for Clifford st. at \$4,256.

**Santa Barbara, Cal.**—To John Williamson, at \$36,000, for construction of 6,000 ft. of piling and other work at Rincon Point preliminary to construction of Rincon sea level road.

**Washington, D. C.**—By Commissioners for improving Forfeit Run Road to M. Pope for \$15,633.

**Carbondale, Ill.**—For paving Poplar st. with macadam to Craine Bros., at \$27,644.

**Brazil, Ind.**—For construction of gravel road in Posey Township, to Wm. D. Webster, of Staunton, Ind., for \$1,250.

**Huntington, Ind.**—By County Commissioners, for building of A. M. Buzzard road, to Landis & Wilson for \$6,512, and for construction of Fulton road to Keefer & Bailey for \$11,778.

**Lebanon, Ind.**—To Geo. F. Miller, by City Council for paving of Walnut and Crooked sts., with brick, including sidewalks and drainage, for \$14,906. The pavement will be laid for \$1.45 per sq. yd.

**Peru, Ind.**—By Board of Miami County Commissioners, for construction of 3 stone roads, to Ray N. Sullivan, Peru, \$2,237; M. A. Boswell, \$4,149, and J. M. Little, \$7,529.

**West Terre Haute, Ind.**—To Foulkes Constr. Co., of Terre Haute, for 7,165 sq. yds. vitr. brick paving at \$1.42 per sq. yd.; 18-in. concrete straight curb at 35 cts. per ft., and 18-in. concrete circular curb at 60 cts.

**Winamac, Ind.**—To W. H. Carey, by Pulaski County Commissioners, for construction of 2 highways, for \$4,240.

**Davenport, Ia.**—For paving 38th st. with brick between 7th and 18th aves., to Tri-City Construction Co., at following bids: Paving, \$1.74 per sq. yd.; curb and gutter, 60 cts. per lin ft.; stone curb, 53 cts. per lin. ft.; excavation, 33 cts. per cu. yd.; 10-in. sewer, 58 cts. per lin ft. The only other bid received was submitted by the Independent Construction Co., as follows: \$1.77, 62 cts., 57 cts., 35 cts., 52 cts.

**Fort Scott, Kan.**—By City Council, for paving Burke st., between 6th and 9th to Midland Construction Co. as follows: Curbing, 35 cents per lineal foot; excavation work, 40 cents per cubic yard; brick paving, \$1.45 per square yard; macadam work, 55 cents.

**Hutchinson, Kan.**—By City Commissioners, for paving street car right-of-way and intersections on Main st., from Avenue D to Fifth to Davis and Everett, at \$1.02 per sq. ft. for asphalt. Ritchie & Son bid \$1.06 per sq. ft. for sand filling and \$1.20 per sq. ft. for asphalt.

**Englishtown, N. J.**—For construction of stone and gravel road 1½ miles long, at Englishtown, by Board of Freeholders, to C. F. Cuttingham, Fair Haven, at \$7,650. Other bids were: Scott Construction Co., Cranbury, \$8,334; I. Walter Butcher, Farmingdale, \$7,900; Price & Hafeman, Red Bank, \$8,638; J. L. LeCompte, Lakewood, \$8,225.

**Buffalo, N. Y.**—By Comrs. of Public Wks., for paving, to Henry P. Burgard Co., 275 Lathrop st., for following streets: Huron st., with asphalt, at \$15,050; Oak st., with asphalt, \$14,000.

**Charlotte, N. C.**—To West Constr. Co., of Chattanooga, Tenn., for paving work in Charlotte at \$150,000.

**Abilene, Tex.**—By City Board of Commissioners, for paving of North Second st., to Womack & Barnett, at \$1.25 per sq. yd. for asphalt macadam.

**Austin, Tex.**—For paving north and south drives around capitol, to Texas Bitulithic Co., of Dallas, at \$2 per sq. yd.

**Dallas, Tex.**—For paying intersection of South Boulevard and Oakland ave. to Texas Bitulithic Co. at \$1,101.22.

**Dallas, Tex.**—By City Commission, for paving with pine blocks portion of Houston st., between Commerce st. and Dallas-Oak Cliff viaduct, to J. A. Gregory, at \$3.14 per sq. yd., or lump sum of \$10,048; also for paving with bitulithic Carroll ave., between Elm st. and East Side ave., to Texas Bitulithic Co., at \$2.30 per sq. yd., or total of \$2,793.18.

**Huntington, W. Va.**—To E. A. Freshwater & Sons, by Board of City Commissioners, for paving of 19th st., from 2d to 3d ave., with vitrified brick. The contract price is \$1,997.

### BIDS RECEIVED

**Pensacola, Fla.**—For street paving as follows (a) square yards, (b) number of days: For wood block on concrete as follows: Cresote Wood Block Co., (a) \$2.59, (b) 250; Jameson & Hallowell Co., (a) \$2.75, (b) 600; J. W. Gurley, (a) \$2.72, (b) 300; W. W. Hatch & Co., (a) \$2.84, (b)

220; Roach Manigan, (a) \$2.65, (b) 400; So. Pav. & Con. Co., (a) \$2.08, (b) 200; Frank P. Proudfoot, (a) \$2.52, (b) 300. For brick on concrete: Alabama Paving Co., (a) \$1.55, (b) 325; W. W. Hatch & Co., (a) \$1.64, (b) 220; So. Pav. & Con. Co., (a) \$1.45, (b) 200. For sheet asphalt: Cleveland Trinidad Co., (a) \$1.80, (b) 200; James & Hallowell Co., (a) \$1.66, (b) 600; William Elder, (a) \$1.61, (b) 300; Eureka Con. Co., (a) \$1.65, (b) 250; Roach Manigan, (a) \$1.84, (b) 300; So. Bitulithic Co., (a) \$1.84, (b) 300; So. Pav. & Con. Co., (a) \$1.57, (b) 200; For bitulithic: Southern Bitulithic Co., (a) \$2.05, (b) 300. For concrete: Cleveland Trinidad Co., (a) \$1.25, (b) 200; Jameson & Hallowell Co., (a) \$1.30, (b) 600; Wm. M. Elder, (a) \$1.18, (b) 300; R. S. Blome Co., (a) \$1.36, (b) 220.

**Brooklyn, N. Y.**—For number of highway improvements and sewer jobs for Queens at office of President Maurice Connolly, aggregating in value nearly \$60,000, according to lowest bids received. Following is list of lowest bidders with amount of their bids: The Hastings Paving Co. is lowest bidder for four jobs of paving with asphalt blocks in Long Island City. Elm st. from Ely ave. to Crescent st., \$4,526.50; 2d ave. from Webster to Graham, \$15,181.60; 13th ave. from Grand to Flushing aves., \$19,872; 9th ave. from Jamaica ave. and Grand st., \$6,406.50. For grading, laying sidewalks and fencing 9th st. from Vernon ave. to East ave., Astoria Construction Co. bid \$1,046. Clancy & Van Alst were the lowest bidders on laying sidewalks in Woodhaven on the south side of Jamaica ave., between Napier pl. and Wyckoff ave.; on the north side of Jamaica ave., beginning 50 ft. east of Lott ave. and running 2,500 ft. easterly, and on the north side of Jamaica ave., 85 ft. west of Lott ave. and running 100 ft. westerly, at \$1,113.75; they were also the lowest bidders on grading and laying sidewalks in Himrod st., from Seneca ave. and Onderdonk; on Harman ave., from Brooklyn line to Grandview ave.; on the east side of Gates ave., from Woodward to Onderdonk, and both sides of Seneca ave., between Elm and Myrtle, all in Ridgewood, at \$2,119.63.

**Syracuse, N. Y.**—For paving Victoria pl. between Westcott st. and Allen st., as follows: Stone Curbing—Guy B. Dickison, Mack block \$6,164.75, Trinidad asphalt \$6,164.75, macadam \$5,499.75; J. C. Dempsey, macadam, \$4,879.50; J. H. Gallup, macadam, \$5,130.75; Warner-Quinlan Asphalt Company, Cowan block \$6,529.75, Trinidad asphalt \$6,035.70, C. T. Hookway, macadam \$5,274.50, Olean block \$6,846.75; Trinidad asphalt \$6,561.75. Combination Curb—G. B. Dickison, Mack block \$5,839.25, Trinidad asphalt \$5,839.25, macadam, \$5,228.50; J. C. Dempsey, macadam \$4,662.50; J. H. Gallup, macadam \$4,803.05; C. T. Hookway, macadam \$4,628.10.

### SEWERAGE

**Union Springs, Ala.**—Citizens have voted in favor of sanitary sewerage system, as follows: \$30,000 for construction of sanitary sewerage system, and \$5,000 for purpose of erecting stand tower.

**Long Beach, Cal.**—Election will be held Nov. 28 for voting on \$350,000 sewer bond issue.

**Jonesboro, Ga.**—Election will be held for voting on bond issue for installation of sewage system.

**Chicago, Ill.**—Steps are being taken to supply Cicero and Austin with improved systems of sewerage by Committees of the Sanitary Board. Proposed improvements will cost, according to present estimates, about \$214,000.

**South Bend, Ind.**—Plans for construction of large trunk sewer on Michigan st., from Monroe st. to La Salle ave., are being discussed.

**Rockville, Md.**—Plans are being discussed for disposal of sewage of various towns near District of Columbia line.

**Springfield, Mo.**—Voters have authorized expenditure of \$100,000 for improvements of city sewer system.

**St. Joseph, Mo.**—Ordinance will be considered for construction of sewer in portion of Sewer District No. 51.

**Newark, N. J.**—Bids will be received until 12 noon Nov. 29 by City Comptroller for purchase of \$1,120,000 Passaic Valley sewer bonds. Tyler Farmly, Comptroller.

**Paterson, N. J.**—Ordinance has been introduced for construction of sewer through Madison ave., between 5th and 6th aves.; through 9th ave., between E. 18th and Madison ave., and through 4th ave., between E. 23d and E. 25th sts.

**Trenton, N. J.**—Ordinance has been passed authorizing construction of Sewer 543 in Morris ave.

**Trenton, N. J.**—Ordinance will be considered authorizing issuance of bonds for purposes of establishing sewage disposal plant.



**Lestershire, N. Y.**—City is discussing advisability of joint trunk line sewer extending from Downsville through Lestershire to Susquehanna River.

**Troy, N. Y.**—Ordinance has been passed authorizing construction of trunk sewer line in Albion district and assessing 9/10 of the cost upon city at large and remainder upon property holders benefited. Sewer will cost about \$70,000.

**Cincinnati, O.**—Resolution has been passed declaring it necessary to improve by sewerage Louis ave., between Eden ave. and Vine st., by constructing 12-in. and 15-in. vitrified pipe sewers; Shields st. from existing trunk sewer west of Vine st. to alley east of Vine st., by constructing 21-in. vitrified pipe sewer; alley and right of way between Vine st. and Euclid ave., from Shields st. to Louis ave., by constructing 18-in. vitrified pipe sewer. Resolution has been passed declaring it necessary to improve by sewerage ravine east of Reading road and south of Blair ave., from end of existing 4½-ft. sewer to Blair ave., by constructing 5-ft. brick sewer; Blair ave., between Reading road and Hartford st., by constructing a 5-ft. brick sewer; Hartford st., between Blair ave. and Cleveland ave., by constructing a 5-ft. brick sewer; right of way east of Reading road, northeasterly from Cleveland ave. to existing concrete sewer south of Windham ave., by constructing a 5-ft. brick sewer, and Cleveland ave., from 175 ft. more or less, east to 215 ft., more or less, west of Hartford st., by constructing 15-in. vitrified pipe sewer. Total cost of constructing trunk sewers in streets and rights of way west of Harrison ave., north and south of Montana ave., to Bridgetown road and Muddy Creek road, also for 24-in. pipe sewer through right of way east of Harrison ave. south of Montana ave. (Westwood); \$162,965.27.

**Girard, O.**—Resolution has been passed authorizing village engineer to prepare plans, specifications, profiles and estimates for storm sewers and paving of State st. between Squaw Creek bridge and southern limits of corporation.

**Warren, O.**—Bid of Western Reserve National Bank, of this city, of \$3,026 for \$3,000 issue of 4½ per cent four-year sewer bonds was accepted.

**Eugene, Ore.**—Charter amendment to issue sewer bonds up to \$100,000 has been voted for.

**Philadelphia, Pa.**—Bids are being received for main and branch sewers, value \$365,000 by Bureau of Surveys.

**Reading, Pa.**—New pump for sewage pumping station, estimated cost of which will be about \$25,000, is likely to be recommended by Board of Public Works to Councils, following inspection of plant.

**Wilkes-Barre, Pa.**—City engineer has been instructed to construct sewers on portions of Edison, Carlisle and Stark sts.

**Clarksville, Tenn.**—Bids for construction of sewerage system have been voted for.

**Chase City, Va.**—Establishment of sewerage system is being considered.

## CONTRACTS AWARDED

**Coalinga, Cal.**—To H. M. Shaffer for constructing sewers, for \$26,317.

**Monrovia, Cal.**—To Watson & Spicer, Box 332, Coronado, at \$13,150 for construction of about 28,000 ft. 6-in. vitr. pipe sanitary sewers.

**Payette, Idaho.**—For constructing sewers in Dist. 2 to K. Sauset, of Corvallis, Ore., for \$18,908.

**Denison, Ia.**—For constructing 9400 ft. of sewer, to Wm. Fitch, Omaha, Neb., at \$4,296.

**Fort Scott, Kan.**—For sewer work on Plaza to Midland Construction Co., as follows: 8-in. sewer pipe, laid, 25c. per lin. ft.; "Y" \$1 each; "T" \$1; manholes, \$27 each; lamp holes, \$4 each; dirt excavation, 60c. per cu. yd. Thogmartin Co. bid as follows: 8-in. pipe, laid, 24½c. per lin. ft.; "Y" junctions, 90c. each; manholes, \$27.50 each; lamp holes, \$5 each; rock excavation, \$3.90 per cu. yd., and dirt excavation, 60c. per cu. yd.

**Malden, Mass.**—By Street and Water Commission, for construction of sewer in Russell st., to Daniel Brandano.

**Buffalo, N. Y.**—For constructing tile sewers in Cambria st., to J. M. Fahning, at \$5,250.

**New York, N. Y.**—For sewer work as follows: Sewer, Castlehill ave., between Parker st. and Walker ave., Vinton Contr. Co.; Turnbull ave. and Westchester Creek, \$33,154. Sewer, etc., Tremont ave., from Sedgwick ave. to Aqueduct ave., Briggs & McLaughlin, 1007 Union ave., \$29,991. Sewer, Kingsbridge Terrace, between Kingsbridge rd. and Boston ave., McDonald & Barry, 230th st. and Broadway, \$17,557.

**Oklahoma City, Okla.**—By Board of City Commissioners for construction of sewer in blocks 2, 6, 7, 8 and 9 Dale Addition to

Stikes Construction Co. at \$2,617.20 and in blocks 17, 18, 19 and 22 in Schilling's Addition to same firm at \$2,450.16; for sewer in block 3 in Caldwell's Addition at \$925.

**Chester, Pa.**—By city, for making sewer connections, to John A. Morgan as follows: Long sewer connections, \$18; central sewer connections, \$17; short sewer connections, \$3.

**Pittsburgh, Pa.**—For constructing sewer in Greenwood st., to M. O'Herron Co., 1st and McKeon sts., Pittsburgh, at \$5,127.

**Richmond, Va.**—By Committee on Streets for construction of Main trunk sewers to drain South Richmond to A. W. Maynard at \$36,000.

## BIDS RECEIVED

**Brooklyn, N. Y.**—For sewer work, Clancy & Van Alst were lowest bidders on two sewers, one in Wibur ave., Long Island City, from Academy to Radde sts., at \$403.80, and the other in Hancock st., Long Island City, from Webster ave. to Crown, 290 feet north of Paynter ave., at \$1,636.50.

The Ford Contracting Co. were lowest bidders on receiving basin at Ridgewood at the southeast corner of Myrtle ave. and Cornelia st., at \$197. Gabriel Hill, for receiving basins on Newton ave., Long Island City, as follows: One at northeast corner, opposite Cooper avenue; one at the southeast corner of Van Alst, and another at the northeast corner of Buchanan, \$620.

## WATER SUPPLY

**Alhambra, Cal.**—Installation of water system is being considered.

**Alamosa, Colo.**—Extensions will be made to waterworks for distance of 1,614 ft.; also additional plugs.

**Pueblo, Colo.**—Election will shortly be held for voting on bonds for installation of filtration plant in North Side.

**Wray, Colo.**—Plans are being made for municipal water system, and question will shortly be submitted to voters.

**Easton, Conn.**—Construction of Cricker Brook basin and reservoir is being discussed.

**Atlanta, Ga.**—Installation of 2 additional pumps to cost about \$300,000 has been recommended.

**Jonesboro, Ga.**—Election will be held for voting on bond issue for installation of waterworks system.

**East Peoria, Ill.**—Plan to install municipal water system is being considered.

**Rushville, Ill.**—Bonds to value of \$31,000 have been voted for installation of municipal waterworks.

**Indianapolis, Ind.**—Board of County Commissioners has prepared specifications for water, heat and light at county jail and courthouse, and will advertise for bids in a few days.

**Alden, Ia.**—All water mains will be re-laid early in spring.

**Audubon, Ia.**—Voters have decided to bond town to extent of \$26,000 for additional waterworks.

**Gates Center, Kan.**—Election will be held for voting on proposition of issuing \$35,000 of bonds for purchase and enlarging of present waterworks system.

**Louisville, Ky.**—Bids for furnishing and putting in place 50 fire hydrants at various points throughout city have been opened by Board of Public Works and contracts will be awarded within next few days. Bids range from \$124 to \$140 per hydrant for those to be erected with short connection, and from \$150 to \$156 per hydrant for those to be erected with long connection. Those who submitted bids are: Edwin S. Larson, Adams & Sullivan, L. R. Figg, G. W. Gosnell and G. W. Younger & Company.

**Covington, La.**—Proposed new waterworks system is being discussed.

**Hubbell, Mich.**—Water meters will be installed by all consumers.

**Marine City, Mich.**—E. S. Black has been granted water franchise for Black District on Morley plat by Common Council.

**Ada, Minn.**—Bonds to value of \$5,000 have been voted for extension of water mains.

**St. Paul, Minn.**—Conference Committee has voted to recommend Common Council authorization of \$100,000 15-year bonds for water board. Following improvements are suggested: Laying reinforced concrete pipe for the conduit leading out from Centerville Lake to replace the wooden conduit now in bad condition; force main from Centerville pumping station to weir chamber, replacing wooden pipe; permanent improvements around pumps and engines recently installed; straightening and dredging of Rice Lake Creek north of Pelter Lake, to facilitate drainage and prevent flooding of private lands; constructing covered conduit north of Vadnals Lake, to prevent undesirable drainage from contaminating the water.

**Belkeman, Neb.**—Plans have been made for waterworks system which provides for 6-in. mains in business section and 4-in. in residential districts; probable cost, \$12,000.

**Hyannis, Neb.**—Bonds to value of \$8,500 have been voted for waterworks improvements.

**Cranford, N. J.**—Cranford Township Committee will hold meeting at township rooms for purpose of signing contract with Plainfield-Union Water Company for return of Netherwood water to town.

**Plainfield, N. J.**—Common Council has taken steps for acquiring municipal water supply, whereby it hopes to secure plant of Plainfield-Union Water Co. in this city.

**Mount Morris, N. Y.**—Question of municipal water works system is once more before residents of Village, and it is understood that Village Board of Trustees will call for special election within near future to determine what action they shall take.

**Niagara Falls, N. Y.**—Proposals will be received for trenching and laying of 12-inch and 6-inch cast-iron pipe on Adams Avenue. For information and plans apply to Western New York Water Company.

**Wellsville, N. Y.**—Installation of new water system is being considered by Village Board.

**Akron, O.**—Election will be held Dec. 5 for voting on whether or not to purchase property of the Akron Water Co. for \$815,000 as basis of municipal water plant for Akron.

**Cincinnati, O.**—Improvements contemplated for Waterworks Department comprise installation of additional pump of 17,000,000 gallons daily capacity at main station at cost estimated of \$160,000; additional pump at Western Hills station, capacity to be 7,000,000 gallons daily and cost \$90,000; laying of additional supply main to Western Hills station, and construction of additional rising main from main station to high service. This main would allow of abandonment of Eden Park pumping station. It is estimated that bond issue of perhaps \$500,000 will be necessary.

**Inola, Okla.**—Waterworks plant will be installed to cost about \$19,000.

**Newberg, Ore.**—Louis C. Kelsey, Selling Bldg., Portland, has been engaged by City to design and supervise construction of new pumping plant and waterworks improvements estimated to cost about \$20,000.

**Phoenix, Ore.**—Bonds have been voted for installation of municipal waterworks.

**Charleston, S. C.**—Installation of new water supply has been reported on by Rudolph Hering. Estimated cost of construction, exclusive of land, as follows: Continuous wood-stave pipe, \$682,500; machine-made wood-stave pipe, \$767,400; reinforced concrete pipe and lock bar steel pipe, \$1,073,800; lock bar steel pipe, \$1,075,700; reinforced concrete pipe and cast-iron pipe, \$1,125,000; cast-iron pipe, \$1,149,300.

**Hartford, S. D.**—Election will shortly be held for voting on bond issue for construction of municipal waterworks.

**Henry, S. D.**—Bonds have been voted at special election for construction of municipal waterworks system.

**Dallas, Tex.**—Bond issue of \$500,000 for waterworks improvement, especially installation of 15,000,000-gallon filtration plant, will be put up to people at election.

**Waco, Tex.**—City Commissioners are gathering expert statistics on water storage. Reservoir to store 20,000,000 gallons of water is contemplated.

**Chase City, Va.**—Establishment of waterworks system is being considered.

**Dayton, Va.**—Voters have decided in favor of installation of water system and fire-fighting facilities.

**Spokane, Wash.**—Plans have been ordered prepared for extension of 6-in. mains on several streets.

**Middlebourne, W. Va.**—Middlebourne Water Company has been incorporated by S. G. Pyle and others for \$10,000 to build and operate waterworks.

## CONTRACTS AWARDED

**Boulder, Colo.**—To Peter O'Brian Construction Company, Nassau Bldg., Denver, Colo., for constructing Silver Lake Dam, at \$52,196.

**Sterling, Colo.**—To Walker Mfg. Co., of Denver, Colo., for fabrication of steel comprising 27 steel gates for intake, branching works and waste-ways on Prewitt Canal; also eight c-i. sluice gates for Prewitt Reservoir.

**Wilcox, Neb.**—For construction of waterworks system to Des Moines Bridge & Iron Company, Des Moines, Ia., at \$12,226.

**Hillsboro, N. D.**—For extensive repairs to municipal waterworks to General Eng. Co., of Fargo.

**Washburn, N. D.**—To General Eng. Co., of Fargo for rebuilding waterworks.

**Oklahoma City, Okla.**—For furnishing city with 5,000,000 gallons of water per day at 2 cents per 1,000 for period of 18 months to Weston Wells Co., of Kiowa, Kan.

**Chester, Pa.**—By city, for making water and sewer connections, to John A. Morgan at following prices: Long sewer connections, \$18; central sewer connections, \$17; short sewer connections, \$8; on 8th st., Barclay to Pusey sts. and Welsh st., 4th st., to Edgmont ave.: long water connections, \$13; central water connections, \$7; short water connections, \$7. On 4th st., Welsh st. to Edgmont ave. and Parker st., 10th to 12th sts., long water connections, \$13; central water connections, \$7.50; short water connections, \$7. On 22d st., Edgmont ave. to Providence ave., long water connections, \$13; central water connections, \$7; short water connections, \$7. On Crosby st., 8th to 10th sts., long water connections, \$13; central water connections, \$7.50; short water connections, \$7. 9th st., Kerlin to Pusey sts., long water connections, \$13; central water connections, \$7; short water connections, \$7. On North st., 6th to 7th sts., long water connections, \$13; central water connections, \$7; short water connections, \$7. Bid to cover 3-4 curb stop, which if not used, \$2 is to be deducted for each connection.

**Springdale, Pa.**—By Borough to J. L. Dick, of Scottsdale, Pa., at \$49,008, for completion of contract formerly awarded to Thoney Pietro. Work includes following: 33,950 lin. ft. of 10, 8, 6 and 4-in. c.-i. water line; 40 fire hydrants; 500 sq. yd. of reservoir lining; 400 lin. ft. of reservoir fence; 11,000 cu. yd. of grading; 12,700 lin. ft. 12, 10 and 8-in. pipe sewer; 20 man holes; 5 lampholes; 2 flush tanks; 30 c.u. yd. concrete abutment.

**Rapid City, S. Dak.**—By the city for about 5½ miles of 14-inch wooden water pipe to Washington Pipe & Foundry Co., of Tacoma, Wash.

**Dallas, Tex.**—By City Commission, for extending well No. 1 at Bachman reservoir, to Trinity sand, to B. J. Harper at \$9 per foot.

**Wapato, Wash.**—By City Council, for sinking well for municipal water system, to E. H. Patterson.

**South Wayne, Wis.**—By Village Board for furnishing all labor and material for construction of complete waterworks system, including deep well, power-house, pumping plant, distribution system, tower and tank: To J. N. Roherty, of Monticello, Wis., at \$9,086. Other bidders were: A. L. Maddrell, Monroe, Wis., \$10,406; W. H. Carter, Cont. Co., Chicago, \$9,341; E. T. Sykes, Minneapolis, \$9,379; G. W. Leisman, Fort Atkinson, Wis., \$9,300; W. Blake, La Crosse, Wis., \$9,165. The contract for steel tower and tank was awarded to the Chicago Bridge & Iron Works, 105th and Throop Streets, Chicago.

### BIDS RECEIVED

**Centralla, Ill.**—For furnishing and laying water main extension to south limits of city, as follows: Willard Bros., \$5,245; Fowler Bros., \$6,384; Hall & Co., \$5,413.14.

**Rock Island, Ill.**—For installation of filtration plant: (a) 3 filter basin, (b) 2 filter basin: John W. Danforth Co., Buffalo, N. Y., a, \$41,000, b, \$38,700; Pitt Construction Co., Pittsburgh, Pa., a, \$35,800, b, \$33,800; Pittsburgh Filter Mfg. Co., Pittsburgh, Pa., a, \$37,600, b, \$35,600; same company on Pitts Filter Co.'s specifications, a, \$39,250, b, \$37,250; N. Y. Continental Jewell Filtration Co., New York, N. Y., a, \$38,000, b, \$36,000; M. L. Bayard, Philadelphia, Pa., a, \$43,500, b, \$41,500.

**Springfield, Ill.**—For furnishing supply of pipe and valves for Water Department: United States Cast Iron Pipe & Foundry Co., Chicago (pipe only), \$2,018.04; American Foundry & Construction Co., Pittsburgh (pipe and valves), \$4,019; Massillon Iron & Steel Co., Massillon, O. (pipe only), \$1,725; the Darling Pump & Mfg. Co., York, Pa. (pipe and valves), \$2,951.

### LIGHTING AND POWER

**Denver, Colo.**—System of ornamental lights for distance of several blocks along business section of Larimer st. is being advocated.

**Madison, Fla.**—Town Council has ordered election Jan. 2 for voting on whether town shall purchase plant of Madison Electric Power Company, and if so, to empower town to issue bonds for that purpose.

**Tampa, Fla.**—Ornamental lighting of Franklin st. from Whiting to Fortune sts. is being considered.

**Jonesboro, Ga.**—Election will be held for voting on bond issue for enlarged municipal electric plant with waterworks and sewage systems.

**Chicago, Ill.**—Illumination of Dearborn st., to cost \$50,000, is planned.

**La Salle, Ill.**—Cost of proposed new lighting equipment on basis of 122 arc lamps and 145 ornamental poles is estimated as follows: 1—Simple, non-condensing steam engine, four-valve, 150 B. H. P., \$2,500; 2—Arc generators with switchboard, \$4,560; belting, \$100; foundations, \$400; hauling, setting, piping, wiring, alterations, \$1,350; 122 magnetite lamps, at \$27, \$3,294—Total \$12,204; engineering and contingencies, \$1,220; total, \$13,424. 1—Simple non-condensing steam engine, four-valve, 150 B. H. P., direct connected to a 100-K. V. A. generator, including exciters and switchboard, \$5,200; foundations, \$300; hauling, setting, piping, wiring, alterations, \$1,500—Total, \$7,000; engineering and contingencies, \$700; total, \$7,700. Summary: Arc lighting equipment, \$13,424; incandescent lighting equipment, \$7,700—Grand total, \$21,124.

**Evansville, Ind.**—Petition signed by Leslie Ramsley asking for better light in neighborhood of Randall Avenue has been received by Board of Public Works.

**Indianapolis, Ind.**—Board of County Commissioners has prepared specifications for heat, light and water at county jail and courthouse, and will advertise for bids in a few days.

**Coffeyville, Kan.**—City Commission has given franchise to Commercial Gas Co. to supply Coffeyville factories with gas.

**Baltimore, Md.**—Plans have been prepared for installation of new system of ornamental lighting around City Hall; estimated cost, \$1,500.

**New Bedford, Mass.**—City Council Committee has ordered additional lights to be placed in various parts of city.

**Albion, N. Y.**—Effort is being made to get franchise for natural gas. Price at which natural gas is to be furnished is not to exceed 60 cents per thousand for illuminating purposes and 50 cents per thousand for heating purposes or where it is used for both purposes.

**Hudson, N. Y.**—Common Council is considering installation of satisfactory voltage regulators.

**Cleveland, O.**—Voters have decided in favor of \$2,000,000 bond issue for erection of electric light and power plant.

**Flandreau, S. D.**—Voters have decided in favor of electric light franchise.

**Roanoke, Va.**—Roanoke Gas & Water Co. will soon have one of most complete gas plants in South at cost of about \$56,000.

### CONTRACTS AWARDED

**Ft. Barrancas, Fla.**—For furnishing pump and other work in connection with power plant at Ft. Barrancas to A. M. Lockett & Co., of New Orleans, La., for \$9,650.

**Waseca, Minn.**—By Water and Light Board to Consumers' Power Company, of Mankato, contract for 10 years to buy current at 4 cents per kilowatt hour. City will operate pumping station, light streets and retail current.

**Chester, Pa.**—By Select and Common Council for lighting city streets, to Beacon Light Co. for 5 years at following prices: 4-amperes magnetite arc \$75 per light per year; carbon filament 16 cp, \$10.50 per light per year; 31 1-4 w. tungsten, \$12 per light per year; 50 w. tungsten, \$19 per light per year; 60 w. tungsten, \$21 per light per year; 80 w. tungsten, \$25 per light per year; 100 w. tungsten, \$29 per light per year.

**Burlington, Vt.**—By city, for new turbine generator and condenser to be installed in municipal lighting plant, to Westinghouse Electric & Mfg. Co. at \$20,500.

**Wheeling, W. Va.**—By city, for new arc lights, to Westinghouse Co., of Pittsburgh, at \$1,325.

### BIDS RECEIVED

**Jacksonville, Fla.**—For new municipal power station as follows: Dougherty & Boehren, Philadelphia, Pa., \$36,774; General Fire Extinguisher Co., Atlanta, Ga., \$33,180; Wm. A. Pope, Chicago, \$46,794; Pittsburgh Piping Co., Pittsburgh, Pa., \$35,900. For pipe covering: Daniel P. Douglas Co., New York, N. Y., \$3,090; Ar-ratt Magnesia Pipe Covering Co., Pittsburgh, Pa., \$3,580; Phillip Carey Co., Philadelphia, Pa., \$3,875; H. W. Johns-Manville Co., \$5,321. For furnishing a storage battery: Gould Storage Battery Co., New York, N. Y., \$1,320, and Electrical Storage Battery Co., Philadelphia, Pa., \$1,549.

### FIRE EQUIPMENT

**Tuscaloosa, Ala.**—Purchase of 1,000 ft. of new hose has been authorized.

**Emeryville, Cal.**—Plans are being prepared for installation of fire department.

**Folsom City, Cal.**—Purchase of new fire apparatus is recommended.

**Oakland, Cal.**—Ordinance has been passed appropriating sum of \$12,000 out of fire fund for automobiles and shop ma-

chinery for fire department. F. R. Thompson, City Clerk.

**Petaluma, Cal.**—Purchase of auto combination chemical and hose wagon are being considered by Fire Commissioners.

**Clearwater, Fla.**—Installation of fire alarm system has been ordered.

**Pensacola, Fla.**—Plans are nearly completed for erection of central fire-alarm station on Alcaniz st.

**Freeport, Ill.**—Election will be held shortly for voting on establishing of fire station in East Freeport, to cost \$20,000.

**Norridgegewook, Me.**—Appropriation of \$2,200 has been made for purchase of new fire apparatus.

**Charlestown, Mass.**—Erection of new fire house for Company No. 3 has been authorized.

**Hopkinton, Mass.**—Committee has been appointed to consider purchase of new fire engine.

**Wakefield, Mass.**—Purchase of motor combination chemical and hose truck for local department is being discussed; estimated cost, \$6,000.

**Wellesley, Mass.**—Additional hose is being considered for Fire Department.

**Duluth, Minn.**—Erection of new fire hall in Third Ward is being considered.

**Elizabeth, N. J.**—Two resolutions will be presented to City Council asking for appropriations of nearly \$7,000; part for installation of fire-alarm system and balance for repair of boiler on Engine No. 1.

**Binghamton, N. Y.**—Resolution has been adopted to advertise for bids for proposed fire alarm cables and equipment.

**Buffalo, N. Y.**—Purchase of new engine for Company No. 34 is under consideration; estimated cost, \$6,500.

**Cohoes, N. Y.**—Board of Fire Commissioners have decided to purchase automobiles for Fire Chief.

**Rochester, N. Y.**—Ordinance is being considered for erection of new fire house at southwest corner of Frank and Platt sts.

**Rochester, N. Y.**—Plans for new fire house on Dewey ave. in Tenth Ward are in course of preparation. It is probable that new house will cost in neighborhood of \$15,000 and will be one of most modern structures of its kind in country.

**Washington, Pa.**—Council will be asked for appropriation for improving fire quarters on Brownson ave. and for purchasing additional equipment.

**Philadelphia, Pa.**—Erection of combined fire and police station at 55th and Pine sts., to cost \$100,000, has been authorized.

**Providence, R. I.**—Wanton Hose Co. has decided to erect new fire station.

**Bay City, Tex.**—City Council has authorized purchase of 1000 ft. of new hose and two shut-off nozzles.

**Walla Walla, Wash.**—Purchase of 1,000 ft. of new fire hose has been authorized by city.

**Milwaukee, Wis.**—Question of more modern equipment in fire department is being discussed.

**Waukesha, Wis.**—Purchase of fire engine is being considered.

**Sydney, B. C., Can.**—Plans are being made for erection of new fire station.

### CONTRACTS AWARDED

**Ft. Mason, Cal.**—For installing fire alarm system at Ft. Mason to International Electric Protection Co., of San Francisco, at \$1,950.

**Pensacola, Fla.**—By City, for furnishing 1,000 ft. of fire hose, to Fabric Fire Hose Co., at \$1.00 per ft., for Warwick wove hose. Other bids were: Manhattan Rubber Hose Manufacturing Co., "Economy," 90 cts. per ft.; Eureka Fire Hose Co., "Red Cross," \$1.00 per ft.; "Eureka Multiple Jacket," 90 cts. per ft.

**Louisville, Ky.**—By Board of Public Works for fire hydrants to cost from \$124 to \$140 each. Following are the awards: Adams & Sullivan, 18; E. Larsen, 18; L. R. Figg & Co., 3, and G. W. Gosnell, 10.

**Holyoke, Mass.**—For two aerial ladder trucks to American-La France Fire Engine Company, of Elmira, N. Y., at \$10,000. Tractors for said apparatus will probably be purchased later.

**Clayton, Mo.**—For combination wagon to Robinson Fire Apparatus Manufacturing Company, of St. Louis, Mo., at \$650.

**Newburgh, N. Y.**—To Fred Herman's Sons for furnishing city with 2,000 ft. of fire hose.

**Toledo, O.**—By Board of Control, for 2,000 ft. of fire hose, as follows: 1,000 ft. to the Union Supply Co., at 95 cts. per foot; 500 ft. to the C. C. C. Fibre & Rubber Co., 85 cts.; 500 ft. to the Toledo Rubber Co., 85 cts.

**Portland, Ore.**—By city for construction of new fireboat to Smith & Watson at \$77,000.

**El Paso, Tex.**—By Fire and Water Committee for supplying fire department with 1000 ft. of hose to Gus Molsen & Company at 87 cents per foot.



## BRIDGES

**Jacksonville, Fla.**—Public Works Committee has authorized necessary repairs to be made to numerous bridges.

**Chicago, Ill.**—Bids will be received until 12 noon, Dec. 14, by City Comptroller for purchase of \$1,500,000 bridge bonds and \$750,000 judgment funding bonds. John E. Traeger, Comptroller.

**Council Bluffs, Ia.**—Bids for construction of wooden and steel bridges in Pottawattamie County have been rejected and new advertisements will be inserted for bids to be received to Dec. 19.

**Sioux City, Ia.**—Building of bridge across Floyd River and opening of 11th or 14th Streets into city are being considered.

**Roswell, N. M.**—Erection of \$6,300 steel bridge over South Berrendo River has been authorized.

**Cincinnati, O.**—Council has passed ordinance authorizing \$12,000 for reconstruction of Fern Street Bridge.

**Dayton, O.**—The \$8,000 Smith Street (Miami) bridge bonds were sold by Montgomery County Commissioners at premium of \$4, purchaser being Dayton Savings & Trust Company.

**Butler, Pa.**—Blue prints of plans for viaduct to be constructed from East Wayne st. to Fairview ave. are being made and will be submitted to contractors.

**Wilkes-Barre, Pa.**—City Council has made plans for erection of South Street Bridge.

**York, Pa.**—Adam County Commissioners will have architect prepare plans for erection of 2-span steel bridge at Aspers.

**Providence, R. I.**—Construction of bridge over between Market Square and Burnside Bridge is recommended.

**Fort Worth, Tex.**—Election will be held Dec. 12 for voting on \$1,600,000 bond issue for bridges and roads.

**Portsmouth, Va.**—Board of Road Reviewers have recommended building of bridge in Washington Magisterial District to afford shorter travel from South Norfolk to Kempsville.

**Spokane, Wash.**—City Commissioners are facing problem of either spending \$4,000 or \$5,000 on repairs for the Post Street bridge to keep it in service for four years more or erecting permanent concrete bridge.

**Bellairs, W. Va.**—City officials and County Commissioners have planned to construct bridge 50 ft. wide across Pinch Run on South Belmont st.

**Parkersburg, W. Va.**—Campaign waged by local Board of Commerce to secure \$100,000 in subscriptions for bonds of proposed new bridge across Ohio River from here to Belpre, O., ended successfully, and preliminary work on new structure will begin immediately.

## CONTRACTS AWARDED

**Auburn, Cal.**—By City, for construction of reinforced concrete bridge across Auburn ravine on New Castle rd., to C. A. Cooper, at \$1,150. Other bids as follows: Chico Construction Company, \$1,775; Ross Construction Company, Sacramento, \$1,485; Crider & Nolte, Colfax, \$1,216.32; Locher & Lardner, Auburn, \$1,480.

**Fresno, Cal.**—To R. F. Ball, at \$8,000, for constructing four pile bridges across Kings River sloughs, 5 miles east of Centerville.

**Kansas City, Mo.**—For viaduct over Kansas City Terminal Railway tracks on McGee st. to W. P. Carmichael Constr. Co., of St. Louis, for about \$40,000.

**Cincinnati, O.**—For reconstructing flooring of Fern Street bridge to Brackett Bridge Company at \$9,975.

**Dayton, O.**—By city, for additional cement work on Wolf Creek bridge, to Al S. Fox at \$9 per cu. yd.

**Port Burwell, Ont.**—To Arthur Pebble for construction of new bridge over Otto River.

## MISCELLANEOUS

**Bakersfield, Cal.**—Town is considering installation of rock crusher and number of gravel cars.

**San Diego, Cal.**—Voters have decided in favor of \$1,000,000 bond issue for harbor improvements and municipal ownership of water front.

**San Francisco, Cal.**—Board of Public Works has approved of plans submitted by City Engineer for construction of comfort station underneath Lotta's fountain; estimated cost, \$15,000.

**Willows, Cal.**—Bids will shortly be advertised for building of \$10,000 seawall above Orland Bridge over Stony Creek.

**Moline, Ill.**—Health Department recommends installation of incinerating plant.

**Indianapolis, Ind.**—Bids will be received on Dec. 6 by Board of Public Works for collection and removal of garbage after May 26, 1912.

**South Bend, Ind.**—River Park Civic Association has been invited by Board of Public Works to meet in joint session in near future to discuss improvements in contemplation in annexed town.

**Covington, Ky.**—Plans have been prepared for remodeling of city crematory.

**Haverhill, Mass.**—Petition will be presented to Municipal Council asking for purchase of land adjoining St. James' Cemetery on Primrose st., to be used as playground.

**Grand Rapids, Mich.**—Council has voted to straighten Coldbrook Creek according to plans of City Engineer Cutcheon at cost of \$28,000.

**Two Harbors, Minn.**—City Council has accepted plans for municipal coal dock.

**Paterson, N. J.**—Additional motorcycles will be purchased for use of motorcycle patrolmen in Police Department.

**Buffalo, N. Y.**—Bids for field house to be erected have been considered by Commission and will be submitted to Common Council. Structure will be of concrete foundation, to cost about \$14,000. There will be a gymnasium and an assembly-room.

**Mechanicville, N. Y.**—Special election will be held Nov. 28 for voting on proposition to bond village for \$20,000 to be expended as follows: \$12,500 to purchase Ocie Howland property in North Main st., and \$7,500 to remodel building on site for municipal purposes.

**Niagara Falls, N. Y.**—Taxpayers at special tax election have decided to buy C. V. Mahoney property at Pine Avenue and Eighteenth Street as public market site for \$39,400.

**Rochester, N. Y.**—Bids will be received by Board of Contract and Supply for erection of garbage disposal plant.

**Rochester, N. Y.**—Bids will be advertised for collection and disposal of garbage for 5 years beginning January 1, 1912. Estimated cost of contract \$80,000.

**Schenectady, N. Y.**—Site on South Center and Hamilton sts. has been selected for erection of public market.

**Troy, N. Y.**—Ordinance has been passed designating site in Sixth Avenue between Jacob and Hutton Streets for new public bath.

**Cincinnati, O.**—Council has passed ordinance authorizing \$8,000 for property for public comfort station at McMillan st. and Burgoyne alley.

**Cincinnati, O.**—Ordinances have been passed authorizing and directing Board of Park Commissioners to enter into contract for purchase of certain real estate and improvements thereon adjoining Burnet Woods for park purposes; authorizing contract for purchase of certain real estate at Western and McLean aves., Bank and Division sts., for playground purposes; authorizing Commission to contract for shelter house at playground in Sycamore st., between East Thirteenth st. and Woodward st., at cost of \$9,000; declaring intent to appropriate property on north side of Central ave. west of Mohawk place for park purposes; to appropriate property for park purposes at Cormany and Henshaw aves.

**Cleveland, O.**—Bids will be received until Dec. 5 on \$1,100,000 contract for new City Hall superstructure and roof.

**Cleveland, O.**—Bids will be received until 12 noon, Dec. 18, at office of City Auditor for purchase of \$250,000 and \$150,000 Cleveland Park coupon bonds; also \$40,000 Cleveland Public Bath House coupon bonds. H. B. Wright, City Auditor.

**Wooster, O.**—Citizens' National and Wayne County National Banks of Wooster jointly purchased \$8,300 city's portion special improvement bonds.

**Philadelphia, Pa.**—The General Manufacturing Co. was lowest bidder on garbage collection at \$420,000. Bid of Penn Reduction Co. was \$510,000. Other bidders were Peoples Bros., \$530,000, and Frank McFarland, \$520,475.

**Providence, R. I.**—Erection of shelter and comfort station has been recommended.

**Jourdanton, Tex.**—Bids have been asked for erection of new court house and jail.

**Portsmouth, Va.**—Commissioners have recommended installation of police box, gong and flashlight system for city.

**Portsmouth, Va.**—Police Committee of Council has recommended purchase of Wrenn & Company, Norfolk, of automobile police patrol, at cost of \$1,800. Vehicle is to be up-to-date in every respect and to be equipped with anti-skid tires.

**Black River Falls, Wis.**—County Board has voted \$12,000 to be used in repairing and rebuilding dam.

## CONTRACTS AWARDED

**San Francisco, Cal.**—For construction of group of buildings for St. Luke's Hospital, on Army, Valencia, Doncan and San Jose sts.: To Van Emon Elevator Co., 46 Natoma st., for two passenger elevators and for automatic dumb waiters, at \$8,075;

Jos. Musto Sons-Keenan Co., 569 N. Point st., for marble work, at \$5,425; Gladding, McBean & Co., Croker Bldg., terra cotta work, at \$23,760; Alex Haus, 16th and Bryant sts., ornamental iron work, at \$4,125; Pacific Rolling Mill Co., 17th and Mississippi sts., structural steel work and columns, at \$1,300; Northern Constr. Co., Mills Bldg., reinforced concrete work, \$62,695; Peerless Fireproofing Co., metal furnishing and lathing work, \$8,800; the San Francisco Cornice Co., Bryant and 9th sts., sheet metal and roofing work, \$7,250.

**Indianapolis, Ind.**—By City, for supplying Police Department with 26 bicycles, to C. Koehring & Bros.

**Des Moines, Ia.**—To Benson & Marker, of Des Moines, to rebuild auditorium at \$18,482.

**Leavenworth, Kan.**—For furnishing structural steel and iron for wings 6 and 7 of Leavenworth Military Prison to Missouri Valley Bridge Co., of St. Louis, Mo., at \$12,243.

**Paterson, N. J.**—By Board of Public Works, for erection of plant for destruction of garbage and other city refuse, to Destructor Company, of New York, at \$81,000; cost of operation for one year, disposing of 18,000 tons of garbage, waste, etc., is \$5,856, and annual repairs are estimated at \$100.

**New York, N. Y.**—For erecting building for Fire Department as follows: To Richard E. Henningham, 1 Madison ave., New York City, for buildings at 50th st. and Lexington ave. and on W. 181st st., east of Audubon ave., both in Boro Manhattan, at respectively \$52,644 and \$68,730, and to Wm. J. Moran, Inc., 136 Broadway, Brooklyn, building on E. 11th st., west of 2d ave., Boro Manhattan, for \$62,723. To Chas. T. Willis, 236 5th ave., to erect 6-story building for Assoc. for Blind at 111 E. 59th st. Total cost, \$100,000.

**Claude, Tex.**—By Armstrong County, for building of new courthouse, to L. R. Wright & Company, of Dallas, at \$48,767.

**Portsmouth, Va.**—By City, for building city's auto police patrol wagon, to C. E. Wright & Company.

**Vernon, B. C.**—To John Burns, of Nelson, B. C., for erection of Court House at \$174,000.

## BIDS RECEIVED

**Chicago, Ill.**—For construction complete of sewage disposal system, water supply system, boilers, pumps, heating, steel tank, tile roofing, electric work, of power house and water tower for Municipal Tuberculosis Sanitarium of city of Chicago at N. 40th and Bryn Mawr aves., and following are the lowest bids received: Carpentry work, H. J. Cohlgraff & Co., 1030 Chicago Opera House Block, \$10,233; masonry, J. C. Robinson & Sons, 79 W. Monroe st., Chicago, \$51,383; lath and plaster, William Dorothy, 155 N. Clark st., Chicago, \$2,970; painting and glazing, J. B. Sullivan & Bro., 833 N. Clark st., Chicago, \$2,939; sheet metal and tile roofing, James A. Miller & Bro., 114 S. Clinton st., Chicago, \$7,287; heating and power plant apparatus, Hanley-Casey Co., 410 W. Ohio st., Chicago, \$27,200; electric work, United Elec. Constr. Co., 569 W. Van Buren st., Chicago, \$5,868; water supply and fire protection, Hanley-Casey Co., 410 W. Ohio st., Chicago, \$21,450; sewer, gas and plumbing, James J. Barrett, 165 Randolph st., Chicago, \$4,197; no bids received on the marble work; refrigeration system, Kroeschell Bros., 472 W. Erie st., Chicago, \$8,300; house tank in tower, Chicago Bridge & Iron Works, 105th and Throup sts., Chicago, \$2,898; vacuum sweeping, Vacuum Engineering Co., 64 W. Randolph st., Chicago, \$5,335; lightning protection, Arrow Conductor & Mfg. Co., 863 N. Franklin st., Chicago, \$2,460.

**Jersey City, N. J.**—For removal of garbage and ashes: (a) for removal of garbage and ashes without separation, (b) for the separate removal of garbage and ashes: O'Reilly Bros., (a) \$60,000; (b) \$62,300; Jas. Conlon & Co., (a) \$54,500; (b) \$79,000; Thos. Harrington Sons, (a) \$52,975, (b) \$55,975.

**New York, N. Y.**—For furnishing material and erecting a new building for a hook and ladder company at 191 Fulton st.: Bethholz Krumholz Constr. Co., \$36,500; Thos. Buckley Constr. Co., \$38,500; Wm. D. Moore, \$34,250; R. E. Henningham, \$35,807; Conroy Eng. Co., \$35,790; John Kennedy Co., \$36,570, and Chas. Wille, \$37,299.

**Rochester, N. Y.**—For erecting Building No. 2, Exposition Park, for the Department of Public Works: A. Friederich & Sons Co., \$22,537; Gorsline-Swan Constr. Co., \$25,367; Dunning & Glasser, \$23,675; P. G. Hauck, \$24,004; Edw. Strauchen, \$25,455; VanEtten & Trudeau, \$26,801.95; A. W. Hopeman & Sons Co., \$25,334.

## TOO LATE FOR CLASSIFICATION

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO.
<b>STREET IMPROVEMENTS</b>				
Ohio.....	Dayton.....	Dec. 4, noon.....	Paving, constructing sidewalks, etc.....	J. C. Ely, Dir. Pub. Service.
Indiana.....	Paoli.....	Dec. 5, 2 p.m.....	Constructing 2 miles road.....	A. B. Ham, County Auditor.
Indiana.....	Winamac.....	Dec. 5, noon.....	Grading, draining and constructing gravel roads.....	W. E. Munchenburg, Co. Aud.
Indiana.....	Brazil.....	Dec. 9.....	Constructing macadam and gravel roads.....	E. A. Staggs, County Auditor.
Ohio.....	Belle Valley.....	Dec. 19, noon.....	Paving 4,380 ft. road with brick (Readvertisement).....	S. S. Barnhouse, Township Clerk.
<b>SEWERAGE</b>				
Ohio.....	Wooster.....	Dec. 1, noon.....	Constructing sanitary sewer.....	H. F. Crowl, Clerk.
Ohio.....	Toledo.....	Dec. 7, noon.....	Constructing 2 local sewers.....	F. G. Stocklin, Secy. Dir. Pub. Serv.
New Mexico.....	Las Cruces.....	Dec. 15, 2 p.m.....	Constructing sewer system.....	R. L. Young, Town Clerk.
<b>WATER SUPPLY</b>				
Pennsylvania.....	Ambridge Boro.....	Dec. 4, 7 p.m.....	Constructing water plant.....	C. R. Doyle, Secretary.
Iowa.....	Audubon.....	Dec. 7, noon.....	Drilling 4 1-2 to 8-in. well, 1,500 to 2,500 ft. deep.....	W. J. Laubender, Clerk.
Ohio.....	Cleveland.....	Dec. 7, noon.....	Furnishing air compressor equipment.....	A. B. Lea, Dir. Pub. Service.
New Mexico.....	Las Cruces.....	Dec. 15, 2 p.m.....	Constructing water system.....	R. L. Young, Town Clerk.
<b>BRIDGES</b>				
Kansas.....	Coffeyville.....	Nov. 30, 10 a.m.....	Constructing 2 bridge approaches.....	Township Clerk.
California.....	San Diego.....	Dec. 4, 3 p.m.....	Constructing bridge.....	J. T. Butler, County Clerk.
Mississippi.....	Vicksburg.....	Dec. 5, noon.....	Constructing floors on 2 bridges.....	J. D. Laughlin, Chancery Clerk.
Missouri.....	Warrensburg.....	Dec. 12.....	Constructing 12 bridges across drainage ditch.....	R. J. Grover, Assistant Secretary.
Ohio.....	Massillon.....	Dec. 15, 10 a.m.....	Constructing Strauss trunnion bascule lift bridge.....	J. H. McConnell, County Auditor.
<b>FIRE EQUIPMENT</b>				
Georgia.....	Columbus.....	Dec. 1.....	Furnishing triple combination fire engine, 6 or 800 gal. capacity.....	W. C. Lawrence, Chairman Com.
Ohio.....	Marion.....	Dec. 14, noon.....	Building central fire station (readvertisement).....	James A. Knapp, Director Pub. Saf.
California.....	Los Angeles.....	Dec. 19, 11 a.m.....	Furnishing 10,000 ft. 2 1/2-in. cotton rubber-lined fire hose.....	City Clerk.
Connecticut.....	New Haven.....	Dec. 5, 7 p.m.....	Furnishing automobile runabout.....	S. J. Metzger, Sec'y. Fire Com.
<b>MISCELLANEOUS</b>				
California.....	Pomona.....	Dec. 4, 7:30 p.m.....	Building annex to public library.....	

## STREET IMPROVEMENTS

**Pasadena, Cal.**—Petition has been received asking for improvement of Elizabeth st., from Lake ave. to east city limits.

**De Land, Fla.**—Ordinance has been passed for construction of sidewalks on portion of south side of W. New York ave., and on both sides of Michigan ave., from Clara and Adele.

**St. Augustine, Fla.**—Petitions have been received for paving with shell on Cincinnati ave and 1st and 2d sts.

**St. Joseph, Mo.**—Ordinances have been passed providing for improvements to various streets of city.

**Le Roy, N. Y.**—Proposition to raise \$3,000 by taxation toward expense of cutting down grade at Ft. Hill has been carried by taxpayers of town by majority of 33.

**Dayton, O.**—Bids will be received until Dec. 19 at office of City Auditor for purchase of \$3,000 worth of bonds for purpose of opening and extending Clover st., from Fillmore st. to Nassau st.

**Erie, Pa.**—Ordinances have been passed providing for following improvements: To re-establish grade of Holland st., from 31st st. 80 ft. north of 29th st.; establishing grade of 24th st., from East ave. to Railroad st.; to repave Diamond alley, between 12th and 14th sts. and Peach and State sts.; to reestablish grade to Poplar st., between 23d and 26th sts.; for grading, curbing where not already curbed, and paving of 7th st., from Wallace to East ave.

**East Providence, R. I.**—Town Council will spend over \$45,000 in improvement and maintenance of highways in town.

**Palestine, Tex.**—Acting on petition presented by Young Men's Business League. City Commissioners have consented to build 5-ft. sidewalk to north of new bungalow recently erected on site of old fire house. Walk will extend from Sycamore to Magnolia sts., and will add greatly to appearance of this section of city.

**Pecos, Tex.**—Board of County Commissioners of Reeves County has been presented with petition, signed by large number of

property owners, asking that an election be called in Reeves County for purpose of issuing \$200,000 "good roads" bonds. Jan. 19, 1912, was set as election date.

**Sherman, Tex.**—Grayson County Commissioners' Court has ordered good roads election in Sherman precinct for Dec. 9. This is in response to petition which proposes issuance of good roads bonds in sum of \$400,000.

**Sulphur Springs, Tex.**—County and City Commissioners are planning to get together on proposition of paving public square of this city.

## CONTRACTS AWARDED

**Pasadena, Cal.**—By city, for work on Cypress ave., to W. E. Mayle, at \$3,191.55; Mayle will grade at \$1.07 per lin. ft.; curb, 27 1/2 cts.; gutter, 15 cts. per sq. ft.

**Ventura, Cal.**—By Ventura County Board of Supervisors, for building necessary piling at Rincon Point and Punta Gorda, in connection with construction of Rincon sea-level road, to John M. Williamson, of Santa Barbara, Cal., for \$36,000. Approximately 6000 ft. of piling will be used.

**St. Augustine, Fla.**—By city, for supplying crushed rock for Orange st., to Baker & Harris, of Jacksonville, at \$2.77 per cu. yd.

**Glencoe, Ill.**—For paving Vernon, Railroad and Hawthorn aves., to Edw. M. Laing, Highland Park, Ill., at \$16,623.80.

**Watseka, Ill.**—By Board of Local Improvements, to J. H. Palmer, for grading, curbing, paving and otherwise improving portion of Park ave. and Oak st., at \$6,429.70 and \$6,138.26 respectively.

**Red Bluff, Ind.**—By Tehama County Board of Supervisors, for construction of two important roads in county. J. T. Swanson was awarded contract for portion of work on Red Bluff-Lyonsville rd., while C. E. Sherwood secured contract for portion of work on Corning-Henleyville rd.

**Vincennes, Ind.**—By Board of Knox County Commissioners, to H. F. Jones, at \$7,890, for gravel road improvement along the Reed rd.

**Ottawa, Kans.**—To N. E. Stucker, at \$3,-

700, for grading and macadamizing W. 2d st.; also road to Hope Cemetery.

**Baltimore, Md.**—By Board of Awards, to F. E. Schneider Paving Co., Law Bldg., at \$48,930.50, for paving portions of sundry streets.

**Towson, Md.**—By State Roads Commission, Baltimore, for construction of about 3 miles of road from Ownings toward Mt. Zion, in Anne Arundel County, to Mr. Jewell, Annapolis, at \$21,621.

**New York, N. Y.**—For paving Leggett ave., from Southern Boulevard to New York, New Haven & Hartford Railroad Bridge, Bronx Boro., to Burnside Constr. Co., 270 Burnside ave., for \$6,071.45.

**Rochester, N. Y.**—To Dunning & Glasser, Exchange Pl. Bldg., at \$2,495, for grading at Front St. Playground.

## SEWERAGE

**Pasadena, Cal.**—Resolution has been introduced for laying sewers on El Molino ave., Santa Rosa ave., Madison ave., Walworth ave., Fisk ave., Normandie st., Rio Grande st., Ladero st., Curtis st., Howard pl., Elizabeth st., Penn st., Atchison st. and Highland st.

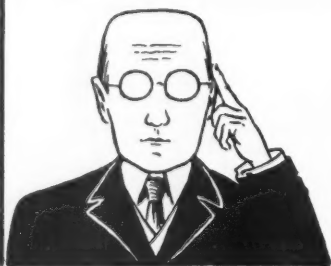
**Atlanta, Ga.**—Plan is being considered to extend all main trunk sewers to city limits, instead of building intercepting sewers from present outfalls to city limits.

**St. Joseph, Mo.**—Ordinances have been passed appropriating \$40,000 from General Sewer Fund to be expended for benefit of sewer conditions in South Park, and \$8,364.68 for purpose of continuing Blacksnake sewer.

**Dayton, O.**—Bids will be received until Dec. 19 at office of City Auditor for purchase of \$6,000 worth of bonds for construction of storm water sewers in Forest ave., from Lehman st. to Main st.

**Erie, Pa.**—New sewerage system is being discussed, and plans are under consideration.

**Erie, Pa.**—Ordinances have been passed providing for 9-in. tile sanitary sewer in 23d st., from east line of Parade st. east 600 ft., and for 9-in. lateral tile sanitary



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